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TO THE

# STRAITS SETTLEMENTS Government Gazette,

FRIDAY, 11th DECEMBER, 1925.



The Straits Settlements Medical Report for the year 1924.

## I.—ADMINISTRATIVE.

### STAFF.

1. The European staff in the Straits Settlements number 92 distributed as follows:—

#### GENERAL.

Principal Civil Medical Officer, Straits Settlements.  
One Financial Officer, Medical Department.

#### HOSPITALS AND DISPENSARIES.

Chief Medical Officer, Singapore.  
One Financial Officer, Hospitals, Singapore.  
Chief Medical Officer, Penang.  
Chief Medical Officer, Malacca.  
Senior Surgeon, Singapore.  
Nine Medical Officers, Singapore.  
Six Medical Officers, Penang.  
One Medical Officer, Malacca.  
One Medical Officer, Labuan.  
Two Matrons, Class I. (One Singapore and one Penang).  
Five Matrons, Class II.  
Seventeen Sisters, Singapore.  
Eleven Sisters, Penang.  
One Sister, Malacca.  
Two European Attendants.

#### HEALTH BRANCH.

Chief Health Officer, Singapore.  
Senior Health Officer, Penang.  
Four Health Officers, Singapore.  
One Health Officer, Malacca.  
Three Sanitary Inspectors.  
Lay Superintendent, Quarantine Station, Singapore.  
Lay Superintendent, Quarantine Station, Penang.  
One Sister, Quarantine Station, Singapore.

## PATHOLOGICAL BRANCH.

One Pathologist, Singapore.

One Pathologist, Penang.

## COLLEGE OF MEDICINE, SINGAPORE.

Principal.

Professor of Physiology.

Professor of Anatomy.

Professor of Medicine.

Professor of Surgery.

Professor of Midwifery and Gynæcology.

## LUNATIC ASYLUM, SINGAPORE.

Medical Superintendent.

Three European Attendants.

One Matron, Class II.

## ANALYST'S BRANCH.

Analyst, Singapore.

Deputy Analyst, Penang.

Two Assistant Analysts, Singapore.

2. In addition 12 time scale Medical Officers and seven Nursing Sisters are borne on the establishment for service in the Unfederated Malay States, and one time scale Medical Officer for service at the Indian Immigration Dépôt, Avadi, Madras, making a total European staff of 112.

The post of Principal Medical Officer, Johore, is also held by a member of the Straits Medical Department.

3. On the return from leave of Dr. A. L. HOOPS, Principal Civil Medical Officer, Straits Settlements, on 5th November, 1924, Dr. JOHN GRAY, who had acted as Principal Civil Medical Officer, since 6th December, 1923, reverted to his substantive appointment of Chief Medical Officer, Singapore.

Dr. J. S. WEBSTER, Professor of Medicine, acted as Chief Medical Officer, Singapore, for Dr. GRAY, during Dr. HOOPS' absence.

4. Dr. H. W. FURNIVALL, who had been acting as Chief Medical Officer, Malacca, went on leave on 20th February, 1924, and was replaced by Dr. W. M. CHAMBERS, who continued to act until the end of the year.

5. The following officers were seconded or transferred during the year:—

<i>Name.</i>		<i>To.</i>	<i>Date.</i>
—		—	—
1.	Dr. A. N. Kingsbury ...	Federated Malay States as Pathologist, Institute of Medical Research ...	14-4-1924.
2.	Dr. R. B. WALLACE ...	Johore as Health Officer	11-10-1924.
3.	Dr. D. R. HENNESSY ...	Johore as Medical Officer ...	15-11-1924.
4.	Dr. T. W. H. BURNE ...	Federated Malay States as Acting Chief Surgeon, Kuala Lumpur	1-12-1924.

6. The following Medical and Health Officers were appointed to the service during the year:—

<i>Name of Officer.</i>	<i>Date of Embarkation.</i>	<i>Date of Arrival.</i>
1. Dr. D. R. HENNESSY ...	... 21-12-1923	18-1-1924
2. Dr. T. E. MARSHALL ...	... engaged locally	11-2-1924
3. Dr. J. C. CARSON ...	... 25-4-1924	22-5-1924
4. Dr. A. DICKSON-WRIGHT ...	... 15-8-1924	13-9-1924
5. Dr. R. B. WALLACE ...	... 29-8-1924	26-9-1924
6. Dr. E. C. DOWNER ...	... 12-9-1924	10-10-1924

7. Two temporary overage officers left on completion of their agreement:—

<i>Name.</i>	<i>Post.</i>	<i>Date of Departure.</i>
Dr. J. B. MASON ...	Medical Officer ...	4th January, 1924.
Dr. F. W. WOOLRABE ...	Health Officer ...	30th September, 1924.

8. The resignation of Dr. J. W. SCHARFF, Health Officer, was accepted on 22nd February, 1924.

9. Dr. FRANKLAND DENT, Government Analyst, Straits Settlements, retired on 1st March, 1924, and was succeeded by Mr. J. C. COWAP, Deputy Government Analyst.

Mr. COWAP's place was filled by Mr. J. W. HADDON, the Senior Assistant Analyst.

10. Mr. A. C. BROOKS was appointed as Assistant Analyst, and assumed duty on the 29th July, 1924.

11. The following officers proceeded on leave during the year:—

<i>Name.</i>	<i>Appointment.</i>	<i>Date of Departure.</i>
Dr. H. W. FURNIVALL ...	Medical Officer ...	20th February, 1924.
Dr. R. B. MACGREGOR ...	Medical Officer ...	14th March, 1924.
Dr. R. D. FITZGERALD ...	Principal Medical Officer, Johore	13th April, 1924.
Dr. H. B. DODDS ...	Medical Officer ...	26th April, 1924.
Dr. A. L. MURISON ...	Medical Officer ...	1st August, 1924.
Dr. N. H. HARRISON ...	Medical Officer ...	11th Nov., 1924.

12. The following officers returned from leave during the year:—

<i>Name.</i>	<i>Post.</i>	<i>Date of Return.</i>
Dr. GILBERT E. BROOKE ...	Chief Health Officer, Singapore ...	9th February, 1924.
Mr. J. C. COWAP ...	Government Analyst	1st March, 1924.
Mr. C. J. SMITH ...	Senior Surgeon ...	15th March, 1924.
Dr. G. A. FINLAYSON ...	Pathologist, Singapore ...	9th April, 1924.
Dr. H. W. FURNIVALL ...	Medical Officer ...	28th July, 1924.
Dr. A. G. H. SMART ...	Health Officer ...	23rd October, 1924
Dr. A. L. HOOPS ...	Principal Civil Medical Officer ...	5th November, 1924.

## FINANCIAL.

1924.

## REVENUE.

				\$	c.	\$	c.
Singapore.	Hospitals Board	...	...	180,410	90		
	Medical General	...	...	4,052	00		
	Health	...	...	57,670	80		
	Analyst	...	...	17,601	50		
						259,735	20
Penang.	Hospitals Board	...	...	49,335	00		
	Payment for Lepers	...	...	83,924	00		
	Medical General	...	...	18,110	00		
	Health	...	...				
	Analyst	...	...				
						151,369	00
Malacca.	Hospitals Board	...	...	12,471	00		
	Medical General	...	...	902	00		
	Health	...	...				
						13,373	00
Labuan.						1,398	50
						425,875	70

1. The revenue collected in the Medical Department is classified under three headings, *viz.*:—

(a) Hospitals Board (Hospitals and Dispensaries).

(b) Medical General which includes Medical, Pathological Branch, College of Medicine, Singapore, Lunatic Asylum and Government Analyst's Branch.

(c) Health Branch.

2. The income from "Hospitals and Dispensaries" and Lunatic Asylum is paid into the account of the Hospitals Board, which is administered by a Special Committee. In addition to the amounts paid into the Hospitals Board Account as shown above the Board received contributions from Government for the various Settlements as follows:—

					\$
Singapore	...	...	...	...	347,930
Penang	...	...	...	...	259,780
Leper Asylum, Pulau Jerejak	...	...	...	...	47,251
Malacca	...	...	...	...	106,670
Labuan	...	...	...	...	3,460
					\$765,091

3. No revenue is derived from the Pathological Branch.

4. Fees collected under Medical General and Health Branch are paid into the Treasury as General Government Revenue.

5. Fees collected under College of Medicine are paid into the College Fund.

1924.

## EXPENDITURE.

			\$	c.
Singapore.—Hospitals Board	...	...	530,696	33
<i>Medical General—</i>				
			\$	c.
Medical, Personal Emoluments	...	...	52,540	30
Medical, Other Charges	...	...	8,361	37
Pathological Branch, Personal Emoluments	...	...	18,172	32
Pathological Branch, Other Charges	...	...	4,718	49
College of Medicine, Personal Emoluments	...	...	84,618	19
College of Medicine, Other Charges	...	...	26,966	22
Lunatic Asylum, Personal Emoluments	...	...	56,953	33
Lunatic Asylum, Other Charges	...	...	64,228	12
Analyst Department, Personal Emoluments	...	...	25,128	16
Analyst Department, Other Charges	...	...	2,010	93
Health Branch, Personal Emoluments	...	...	109,359	94
Health Branch, Other Charges	...	...	45,621	83
Hospitals and Dispensaries, Personal Emoluments	...	...	698,702	54
				1,197,381 74
				1,728,078 07
Penang.—Hospitals Board	...	...	322,896	00
<i>Medical General—</i>				
Medical including Pathological Branch, Personal Emoluments	...	...	41,783	96
Medical including Pathological Branch, Other Charges	...	...	4,696	93
Analyst Department, Personal Emoluments	...	...	10,508	84
Analyst Department, Other Charges	...	...	...	...
Health Branch, Personal Emoluments	...	...	48,946	55
Health Branch, Other Charges	...	...	28,684	98
Hospitals and Dispensaries, Personal Emoluments	...	...	219,943	88
Federated Malay States Agency Account	...	...	1,635	33
				356,200 47
				679,096 47

				\$	c.
			Brought forward ...	1,728,078	07
				679,096	47
Malacca.—Hospital Board	...	...	...	87,245	00

*Medical General—*

	\$	c.	
Medical, Personal Emoluments ...	20,346	93	
Medical, Other Charges ...	1,500	00	
Pathological Branch, Personal Emoluments ...	7,185	10	
Pathological Branch, Other Charges ...	2,399	45	
Health Branch, Personal Emoluments ...	13,899	81	
Health Branch, Other Charges ...	6,402	94	
Hospitals and Dispensaries, Personal Emoluments ...	64,158	19	115,902 42

					203,137 42
Labuan ...	...	...	...	...	17,411 59

Total ... \$2,627,723 55

The Other Charges of the Hospitals and Dispensaries are shown under the head Hospitals Board Expenditure.

1. The total expenditure of the Medical Department for the Straits Settlements for the year 1924 amounted to \$2,627,723 55.

2. Under College of Medicine the expenditure for Personal Emoluments is shown as \$84,618.19 and Other Charges as \$26,966.22. Half of these amounts were refunded by the Federated Malay States Government.

## II.—PUBLIC HEALTH.

(a) General Remarks:—

1. The following table gives the estimated population, with births and death-rates for the years 1923 and 1924—all nationalities:—

SETTLEMENT OR PROVINCE.	POPULATION.		Births.		Deaths.		Birth Ratio per mille.		Death Ratio per mille.	
	Estima- ted	Estima- ted								
	1923.	1924.	1923.	1924.	1923.	1924.	1923.	1924.	1923.	1924.
Singapore ...	457,571	469,071	12,876	14,398	12,153	12,574	28·14	30·69	26·56	26·49
Labuan ...	5,972	5,746	229	225	171	197	38·34	39·15	28·63	34·28
Penang Island ...	166,880	170,383	5,464	5,752	5,126	5,166	32·74	33·82	30·72	30·32
Province Wellesley	130,618	131,241	4,039	4,451	3,914	3,822	30·92	33·64	29·97	29·12
Dindings ...	13,283	14,217	386	404	290	300	29·06	28·42	21·83	21·10
Malacca ...	160,886	170,294	5,462	5,834	4,341	4,299	33·95	34·26	26·98	25·24
Total ...	935,210	960,952	28,456	31,028	25,995	26,358	30·43	32·29	27·80	27·42

2. *Deaths.*—The deaths from all causes registered in 1924 were 26,358 as against 25,995 in 1923. The crude death-rate of 27.42 per thousand of population was the lowest death-rate on record.

## INFANTILE MORTALITY.

3. The infantile mortality rate was 204·76 per mille as against 200·73 in 1923. The training of midwives of all nationalities is being actively continued. The overcrowding in the cities of Singapore and Penang and the paucity of trained midwives in Province Wellesley and Malacca are factors in the high infantile mortality.

## (b) General diseases:—

## BERI-BERI.

4. The actual population in 1911 was 711,951, and deaths from Beri-beri 2,056.

The estimated population in 1918 was 827,719, and the deaths from Beri-beri 1,958. The deaths from Beri-beri in the following three years when food control was in operation, and the use of overmilled rice as a staple article of diets, was diminished, were 1,430, 1,025 and 1,299 respectively.

In the latter year the Census population was 881,939.

The deaths from Beri-beri in the last 3 years 1922, 1923 and 1924, were 1,388, 904 and 910 respectively. The estimated population in 1924 is 960,952. The diminution is probably due in part to the spread of knowledge as to the necessity for a varied diet.

There were 136 deaths among the 838 cases of Beri-beri admitted into Government Hospitals during the year.

## TUBERCULOSIS.

5. There were 2,389 deaths from Tuberculosis and Phthisis as against 2,683 in 1923 and 2,966 in 1922. 1778 cases were admitted to hospitals with 849 deaths.

6. Dysentery was responsible for 842 deaths, distributed as follows:—

Dysentery Amoebic	...	...	211
Dysentery Bacillary	...	...	197
Dysentery unclassified	...	...	434

842 as against 839 deaths

in the previous year.

## MALARIA.

In considering the deaths from Malaria, those registered as from Fever unspecified, the majority of which are probably Malaria, must also be taken into account.

Returns for the last four years are—

		<i>Malaria.</i>	<i>Fever unspecified.</i>	<i>Total.</i>
		—	—	—
1921	...	4,713	2,281	6,994
1922	...	3,977	3,051	7,028
1923	...	3,430	2,946	6,376
1924	...	3,462	2,706	6,168

The figures indicate a marked fall in the mortality rate, during the past 2 years.

## ANKYLOSTOMIASIS.

8. The total numbers of Ankylostomiasis cases treated and of deaths therefrom in the hospitals of the Colony for the last five years are:—

<i>Year.</i>	<i>Remained from previous year.</i>	<i>Admitted during the year.</i>	<i>Total treated.</i>	<i>Deaths.</i>
—	—	—	—	—
1920	...	69	1,432	312
1921	...	100	1,844	278
1922	...	91	2,064	163
1923	...	109	2,399	124
1924	...	87	1,860	120

An arrangement has been concluded with the Rockefeller Foundation for a preliminary hookworm survey of the Straits Settlements, to commence early in 1925, with a view to undertaking a joint 3 years Hookworm and Rural Sanitation Campaign from the middle of the year. The expenses of this work are to be shared by the International Health Board of the Rockefeller Foundation and the Government of the Straits Settlements.

In this connection the following inpatient figures from Tan Tock Seng Hospital reports are of interest:—

<i>Year.</i>	<i>Number of Tan Tock Seng inpatients examined for hookworm.</i>	<i>Number found infected.</i>	<i>Percentage infected.</i>	<i>Method.</i>
—	—	—	—	—
1923	... 8,831	1,699	19.2	Plain Smear.
1924	... 8,734	2,634	30.1	Plain Smear.

The Willis flotation method used by the Rockefeller workers will be adopted in 1925, and will doubtless show a higher percentage of infection.

Hookworm mortality at Tan Tock Seng Hospital:—

<i>Year.</i>	<i>Number treated primarily for Hookworm.</i>	<i>Deaths ascribed to Hookworm.</i>	<i>Percentage case mortality.</i>	<i>Total deaths from all causes.</i>	<i>Percentage of total deaths ascribed to Hookworm.</i>
—	—	—	—	—	—
1920	... 185	33	18.03	1,306	2.5
1921	... 211	22	10.42	1,530	1.4
1922	... 294	28	9.52	1,578	1.7
1923	... 329	19	5.77	1,300	1.4
1924	... 494	34	6.88	1,301	2.6
		136		7,015	average 1.9

Over a period of 18 years at Tan Tock Seng the Government Pathologist has found that 1.9 per cent of all deaths in which a post mortem was performed, were due primarily to Hookworm.

In Tan Tock Seng on an average Ankylostomiasis causes about one sixth as many deaths as Malaria.

<i>Year.</i>	<i>Total deaths all causes.</i>	<i>Deaths registered as due to Malaria.</i>	<i>Deaths registered as due to Hookworm.</i>	<i>Percentage of deaths due to Malaria.</i>	<i>Percentage of deaths due to Hookworm.</i>
—	—	—	—	—	—
1920	... 1,306	182	33	13.9	2.5
1921	... 1,530	205	22	13.3	1.4
1922	... 1,578	168	28	10.6	1.7
1923	... 1,300	134	19	10.3	1.4
1924	... 1,301	130	34	9.9	2.6
Total	... 7,015	819	136	11.6	1.9

The figures given above have been extracted from the annual returns. I am indebted for their collation to Dr. MILFORD BARNES of the Rockefeller Foundation.

#### TREATMENT.

9. *Leprosy.*—(a) The number of lepers treated in our Leper Asylums during the year was 891 and the total deaths 150.

The following summary indicates the results obtained from treatment for the periods mentioned:—

		<i>Under six months.</i>		<i>Six to twelve months</i>		<i>Twelve to twenty-four months.</i>		<i>Over two years.</i>	
		M.	F.	M.	F.	M.	F.	M.	F.
Cure	...	—	—	—	—	—	—	—	—
Definite improvement	...	—	—	—	—	—	—	—	3
Slight do.	...	6	3	7	2	5	2	2	10
No do.	...	6	7	4	1	4	2	3	13
Getting worse	...	—	—	—	—	2	—	4	5
Deaths	...	2	2	9	—	1	—	—	5

## II. LEPER ASYLUM, PULAU JEREJAK.

REPORT BY A. H. WHEATLEY, *Deputy Medical Officer in charge.*

### I.—(a) Statistics of Admissions, Inmates and Deaths:—

Year.	Inmates on 31-12-23.	Admissions.				Total inmates.	Total on 31-12-24.
		Colonial.	Perak.	Selangor.	Kedah.		
1924.	539	126	42	14	5	726	584
				Deaths.			
		65	44	16	5	130	

(b) The daily average number present was 545.

(c) The total admissions were 187 males (females are not admitted), of these, 28 sought admission.

(d) Four lepers were discharged and 8 absconded. One of the eight was recaptured.

(e) The death-rate was 179.00 per mille.

(f) Of the 187 admitted, 112 accepted treatment.

### 2. Statistics of 7 years Treatment of Leprosy by Modern Methods:—

Year.	<i>Lepers present.</i>	<i>Accepted treatment.</i>	<i>Apparently cured.</i>	<i>Markedly improved.</i>
—	—	—	—	—
1918	... 568	7	—	—
1919	... 540	7	—	1
1920	... 549	36	—	6
1921	... 655	133	1	16
1922	... 699	357	1	19
1923	... 688 (3)	436	2	21
1924	... 726 (3)	528 (1)	1	33 (2)
Totals	... 4,425	1,504	5	96

(1) Of 528 who accepted treatment during the year 423 appeared to be incurable.

(2) In three of these 33 cases no lesions could be found but Lepra Bacilli persisted in their Nasal Secretions.

(3) Statistics of Durations of Disease previous to admission:—

<i>Duration.</i>					1923.	1924.
—					—	—
1 year	...	...	...	...	5	9
2 years	...	...	...	...	5	10
3 „	...	...	...	...	53	48
4 „	...	...	...	...	34	31
5 „	...	...	...	...	38	40
6 „	...	...	...	...	32	29
7 „	...	...	...	...	5	5
8 „	...	...	...	...	5	6
9 „	...	...	...	...	3	7
10 „	...	...	...	...	10	2
Total admitted					190	187

#### CONDUCT OF INMATES.

3.—(a) On 2nd July, 1924, there was a riot in connection with the distribution of Chandu. Five ringleaders were arrested. Four have been deported and the fifth will follow in January.

(b) On 11th November, 1924, there was a clan fight between Teochews and Cantonese. One Cantonese was killed. Five Teochews were arrested. The Coroner returned a verdict of Murder against all five. The Magistrate's Inquiry held in Penang resulted in their committal for trial at the January Assizes in Penang. Meantime they were kept under detention at the Leper Asylum. On 20th January, 1925, they were acquitted by a Special Jury.

4.—(a) The total rainfall was 2,263.00 mm.

Rain fell on 141 days.

The maximum fall on any one day was 116.50 mm.

(b) The freshwater supply was deficient on two occasions. Water-boats brought 994 tons from the Penang Municipal Supply.

(c) The Storage capacity of the freshwater reservoirs was increased greatly by the completion of repairs to the "Green Bank" Reservoir (which now holds 21 feet of water as against five previously) and to the Main Asylum Reservoir (which now holds water to a level of six feet as against one foot previously).

5. Buildings under construction or re-construction.

Camp "A":—

Two wards to hold 30 beds each.

Two wards to hold 60 beds each.

6.—(a) The proposed site of “Camp E” has been drained by subsoil pipes.

(b) Work in connection with the scheme for a water supply for Camp “E” was in progress at the end of the year.

7.—(a) Nationalities of inmates:—

Nationality.	Colonial.	Perak.	Selangor.	Kedah.	Total.
Bengalee ...	3	2	...	...	5
Cantonese ...	115	90	42	5	252
Hockchew ...	3	1	1	...	5
Hokkien ...	75	25	9	4	113
Hoichew ...	8	2	...	...	10
Hylam ...	25	1	5	3	34
Kheh ...	41	44	40	3	128
Teochew ...	53	4	1	5	63
Eurasian ...	8	1	...	...	
Phillipino ...	2	...	...	...	2
Tamil (Islam) ...	5	...	...	...	5
Malay ...	3	...	1	...	4
Tamil (Hindu) ...	33	44	6	13	96
Total ...	374	214	105	35	726

Chinese 605.

## Occupations of inmates previous to Admission.

Occupations.			Colonial.	Perak.	Selangor.	Kedah.	Total.
Attendant	...	...	2	...	1	...	3
Barber	...	...	5	2	2	...	9
Beggar	...	...	4	...	...	...	4
Blacksmith	...	...	7	1	1	...	9
Boatman	...	...	4	...	...	...	4
Boy	...	...	3	...	...	...	3
Butcher	...	...	1	1	1	...	3
Cake-seller	...	...	3	1	1	...	5
Carpenter	...	...	15	6	8	...	29
Cart-driver	...	...	5	5	...	2	12
Cart-puller	...	...	2	...	...	...	2
Cobbler	...	...	...	1	...	...	1
Conductor	...	...	2	...	...	...	2
Contractor	...	...	...	1	...	...	1
Cook	...	...	8	...	1	...	9
Detective	...	...	1	...	...	...	1
Dhoby	...	...	4	...	...	...	4
Dresser	...	...	1	...	...	...	1
Engine-driver	...	...	1	...	1	...	2
Estate coolie	...	...	20	...	4	6	30
Fireman	...	...	2	...	...	...	2
Fisherman	...	...	6	...	...	...	6
Fitter	...	...	2	1	1	...	4
Gardener	...	...	10	12	...	...	22
General coolie	...	...	132	40	13	18	203
Goldsmith	...	...	2	1	1	...	4
Grass-cutter	...	...	4	5	2	...	11
Grave-digger	...	...	1	...	...	...	1
Hawker	...	...	16	6	3	...	25
Mason	...	...	8	3	7	1	19
Mining coolie	...	...	...	70	29	...	99
Motor-car driver	...	...	3	...	...	...	3
Musician	...	...	1	...	...	...	1
Nil	...	...	42	8	1	3	54
Painter	...	...	6	2	...	...	8
Rickshaw puller	...	...	3	...	1	...	4
Rubber Tapper	...	...	15	27	15	...	57
Sailor	...	...	1	...	...	...	1
School boy	...	...	4	2	...	...	6
Shoe-maker	...	...	1	1	...	...	2
Shop-keeper	...	...	3	2	1	1	7
Stone-breaker	...	...	2	...	1	...	3
Syce	...	...	2	...	...	...	2
Tailor	...	...	2	...	...	...	2
Tindal	...	...	1	1	...	...	2
Toty	...	...	2	1	...	...	3
Vegetable planter	...	...	6	4	7	...	17
Watchman	...	...	2	2	...	...	4
Water carrier	...	...	1	...	1	...	2
Wood-cutter	...	...	6	6	2	2	16
Total			374	214	105	33	726

## FEMALE LEPER WARDS, JELUTONG.

REPORT BY W. A. TAYLOR, M.B., ch.B., *Chief Medical Officer, Penang.*

8.—(1) Thirty-eight inmates remained in the Female Leper Wards at the beginning of the year—11 Perak Lepers and 27 Colonial Lepers.

(2) There were 5 admissions during the year—4 from Colony and one from Perak—making a total of 43 treated in all.

(3) Only one death occurred during the year—a Perak leper—giving a death-rate of 2·32 as compared with 10 deaths and a death-rate of 18·86 in 1923.

(4) The average daily number of inmates for the year was 39·28 as compared with 38·65 of the previous year.

(5) Thirty-six cases were under treatment with injections of E. C. C. O. twice a week—in addition to oral administration of chaulmoogra oil in gelatine capsules and inunction of the oil.

During the latter part of the year 10 cases were given intravenous injections of iodine. One case with extensive chronic ulcerations of the legs rapidly improved after a few injections—the ulcers have almost healed.

## APPENDIX "B"

## HEALTH BRANCH.

## I.—SINGAPORE.

REPORT BY GILBERT E. BROOKE, D.P.H., *Chief Health Officer, Singapore.*

## (i)—MARINE WORK.

1. The marine work for the year was in charge of Drs. W. D'CRUZ and P. C. FERNANDEZ.

2. Vessels reached Singapore from 368 different world ports, and the total net tonnage entering the port was 10,980,290.

3. The revenue of the Marine and Quarantine Branch was \$52,741 and the expenditure thereon was \$96,235·17 showing a net cost to Government of \$43,494·17.

4. The number of visits paid to vessels was 1,433, during which examination of crew and passengers were made to the number of 408,419, bringing the total of such examinations, since our establishment, up to the figure of 8,602,011.

Attached hereto will be found a resume of this work for the last 22 years.

5. For the third year running, the health of Eastern ports was good. The following were quarantined for various periods:—Amoy, Bangkok, Bassein, Bombay, Calcutta, Hongkong, Karachi, Madras, Negapatam, Osaka, Padang, Port Swettenham, Rangoon, Saigon and Sourabaya. Of the incoming ships only 22 were infected: 3 with Cholera; 16 with Small-pox; and 3 with Cerebro-Spinal Meningitis.

6. Cholera however calls for some special mention from an epidemiological point of view, as illustrating the vagaries of its transmission. On May 17, 1924, the s.s. *Ellenga* arrived infected and 17 cases of Cholera developed amongst the coolies landed from that ship on the Quarantine Station at Pulau Jerejak. On June 15, the s.s. *Teesta* arrived with Cholera (also amongst the Negapatam passengers) there having been 31 cases on the voyage, 66 cases at Pulau Jerejak and 113 at Port Swettenham Quarantine Station.

Negapatam was consequently declared to be an infected port and immigration therefrom was temporarily prohibited by G. N. 1,110 and 1101 on 10th June. On May 31, a telegram was received from Penang to the effect that 3 cases of Cholera had occurred amongst the crew of s.s. *Ipoh* from Port Swettenham.

As it seemed probable that the infection had some means of escape from Port Swettenham, that port was temporarily declared infected on account of Cholera by *Gazette Extraordinary* on June 3rd, restrictions being subsequently removed on July 4th. The wisdom of this action became apparent for some petroleum lighters arrived at Singapore from that port, and a case was almost immediately afterwards reported from a Tamil shipping lodging house in Tank Road to be followed by 9 other cases in the town between June 17th and June 30th. Fortunately the epidemic was kept in check by prompt action on the part of the Municipal Health authorities.

Immigration prohibition restrictions against Negapatam were removed on August 8th.

7. The following is a resume of the marine work done in Singapore.

(ii)—RESUME OF PORT AND QUARANTINE WORK, 1924.

*Shipping and Office:—*

Tonnage entering Singapore	...	...	10,980,290
Fumigations by disinfecting launches	...	...	513
Visits to Ships	...	...	1,433
Crew examined	...	...	113,730
Passengers examined	...	...	294,689
Ships infected	...	...	22
Outgoing pilgrims inspected	...	...	18,784
Outgoing pilgrims ships inspected	...	...	22
Chinese Immigrants	...	...	181,430
Water boats examined	...	...	40
Undertakings issued to cabin passengers	...	...	178
Corpses inspected in harbour	...	...	54
Number of different world ports from which Steamers arrived	...	...	368
Number of Bills of Health issued	...	...	2,912
Amount received for the same	...	...	\$14,245
Number of permits to Import and Export Corpses issued	...	...	46
Amount received for same	...	...	\$460
Number of Bonds issued	...	...	21
Number of disinfection Certificates issued	...	...	496
Amount received for disinfection Certificates issued, and fumigation charges	...	...	\$38,036

Prosecutions under Ordinance No. 157 (Quarantine and Prevention of Disease):—

Master, Surgeon and Chinchew of s.s. *Arabestan* prosecuted on 7th February, 1924 for landing a case of Small-pox—each fined \$100 and costs

Number and names of ports quarantined—15 as under:—

Amoy, Bangkok, Bassein, Bombay, Calcutta, Hongkong, Karachi, Madras, Negapatam, Osaka, Padang, Port Swettenham, Rangoon, Saigon and Sourabaya.

Condensed resume of some work of Port Health Office for 22 years.

<i>Year.</i>	<i>Crew and Passengers examined.</i>	<i>Passengers sent to St. John's Island.</i>	<i>Visits to vessels.</i>	<i>Bills of Health issued.</i>
—	—	—	—	—
1903 ...	321,365	21,253	806	1,000
1904 ...	279,297	17,852	712	1,036
1905 ...	323,431	12,109	1,279	1,220
1906 ...	493,021	30,076	1,625	1,674
1907 ...	377,325	25,408	1,226	1,318
1908 ...	303,484	29,356	1,506	1,344
1909 ...	291,625	15,072	1,251	1,299
1910 ...	467,868	35,062	1,920	1,200
1911 ...	538,291	53,961	2,100	1,800
1912 ...	539,677	56,726	1,927	2,145
1913 ...	506,925	56,838	1,818	1,582
1914 ...	402,583	18,193	1,803	1,802
1915 ...	200,978	3,335	821	1,563
1916 ...	426,584	9,738	1,617	1,726
1917 ...	277,442	78,881	694	1,915
1918 ...	284,198	24,182	1,709	2,086
1919 ...	411,921	28,318	2,130	2,160
1920 ...	507,176	31,991	2,023	2,878
1921 ...	511,747	8,950	1,851	2,951
1922 ...	369,072	15,343	1,552	2,720
1923 ...	395,583	7,374	1,360	2,718
1924 ...	408,419	39,053	1,433	2,912
	<hr/> 8,602,011 <hr/>	<hr/> 729,071 <hr/>	<hr/> 33,163 <hr/>	<hr/> 41,049 <hr/>

### (iii)—QUARANTINE STATION, ST. JOHN'S ISLAND.

This calls for very little comment.

The passengers landed for observation or treatment numbered 39,053 of whom 153 were treated in hospital with a death-rate amongst treated of 15.03 per cent.

Vaccinations to the number of 9,596 were performed.

The price of firewood again did not justify the station distillation for the necessary water-supply—1,470,784 gallons of Singapore water being used during the year. The distilling plant was however kept in order.

The station staff numbered 71 none of whom contracted any infectious disease.

The general cleaning, regrading and minor works continued to be well done under the direction of the Health Officer, Quarantine (Dr. NELSON G. COOPER) and the Lay Superintendent (Mr. M. J. NIALL). The latter, who is about to retire on pension, has put in much good work since he first joined the staff in the 20th June, 1914.

## FIGURES FOR THE YEAR 1924 OF ST. JOHN'S ISLAND.

(1) Total passengers admitted during the year	...	39,053
(2) Greatest number admitted in any one day	...	2,218 (25/3/24).
(3) Maximum number in residence on any one day	...	4,566 ( 6/6/24).
(4) Minimum number in residence on any one day	...	1 ( 8/3/24).

(Note.—On 278 days there were none in residence.)

(5) Total sick treated in Hospital, <i>i.e.</i> , total admissions during the year and patients remaining in Hospital on 31st December, 1923	...	153
(6) Average daily number of sick in Hospital	...	416
(7) Maximum number in Hospital on any one day	...	44 (10/4/24).

(Note.—On 70 days there were none in residence.)

(8) Minimum number in Hospital on any one day	...	1
(9) Total deaths during the year = 23 plus 6 outside Hospital	...	29
(10) Death-rate amongst total treated	...	15.03%
(11) Total number of deaths among cases treated	...	23
(12) Total cases of Cholera admitted	...	—
(13) Total cases of Plague admitted	...	—
(14) Total cases of Small-pox admitted (including 2 Europeans)	...	19
(15) Total Rainfall	...	94.084 inches.
(16) Greatest rainfall in 24 hours	...	4.235 (14/2/24).
(17) Total number of rainy days	...	160
(18) Number of vaccinations	...	9,596
(19) Corpses sent for P. M. Examination and Burial	...	1
(20) Number of Municipal Contacts and patients admitted:—		

Contacts	{	Small-pox	...	69
		Plague	...	—
		Cholera	...	56
		C. S. M.	...	—
Patients		...	...	—

(21) Number of Government Contacts and patients admitted:—

Contacts	{	Small-pox	...	6
		Plague	...	—
		Cholera	...	20
		C. S. M.	...	—
Contacts	{	Observation	...	9
		Typhus	...	9
Patients		...	...	—

(22) Number of Municipal Contacts who developed infectious diseases on the Island	...	—
(23) Number of Government Contacts who developed infectious diseases on the Island	...	—
(24) Number of non-infected ships whose passengers subsequently developed infectious diseases on the Island (none out of 90)	...	—

- (25) Number of infected ships whose passengers subsequently developed infectious diseases on the Island—3 out of 18:—

3	{	1 Small-pox	... Van Cloon.
		1 Small-pox	... Arabestan.
		1 Cerebro-Spinal Meningitis	... Takada.

- (26) Number of gallons of Singapore water pumped up ... .. 1,470,784
- (27) Cases treated as out-door patients ... .. 167

(iv)—ANNUAL REPORT ON CONSERVANCY FOR 1924.

By J. I. BAEZA, D.P.H.

1. I arrived in Singapore from Malacca on the 16th March, 1924, and took over the duties of Health Officer (Rural) on that day.

This report is divided into Part I—*Sanitation of Rural Areas*, and Part II—*Anti-Malarial Work in Rural Areas*.

The Rural Area Staff comprises:—

One Health Officer	...	Dr. J. I. BAEZA.
One Anti-mosquito Inspector	...	Mr. J. S. DE VILLIERS.
Five District Sanitary Inspectors	...	Messrs. AIYATHURAI, BROWN, GEORGE, RUFUS and JOSEPH.
One Mosquito Collector	...	Mr. ZAIRUMAN.
One Assistant Collector	...	Mr. KASSAN BIN KUNOH.
Two Overseers	...	Messrs. PIPER and MUTTUKUMAROO.

Fourteen Mandores and 187 Coolies.

Note.—Of the 14 Mandores, 8 are Anti-mosquito and 6 Conservancy and of the 187 Coolies, 123 are Anti-mosquito and 64 Conservancy.

I have to record with much satisfaction the energetic work of the entire staff, particularly Mr. J. S. DE VILLIERS.

The Rural Area of Singapore is 188.5 square miles in extent and has an estimated population of 75,290.

It is divided into 5 main districts or Sanitary Centres, *viz.*:—

The District of Pasir Panjang including Pulau Brani, Pulau Bukom Kechil and Tanjong Kling; the District of Bukit Timah; the District of Seletar; the District of Paya Lebar including Pulau Ubin and the District of Geylang—Siglap including Pulau Tekong.

2. The following table shows comparative figures (Population, deaths, births and infantile mortality) with those of 1923 and 1922:—

Year.	Estimated Population.	Total Deaths.	Death Rate.	Total Births.	Birth Rate.	Infantile Mortality.
1922	... 70,432	1,984	28.17	2,043	29.01	209.5
1923	... 72,861	2,019	27.71	1,864	25.58	265.6
1924	... 75,290	1,957	25.99	2,641	35.07	214.6

Both the death-rate and infantile mortality figures are reduced, while the birth-rate shows a considerable increase over the two previous years.

*Infectious Diseases.—*

The rural areas were remarkably free from infectious diseases.

Among the major, there were 2 cases of cholera and 1 of small-pox.

Among the minor, there were 9 cases of measles, 3 of diphtheria, 1 of chicken-pox and 3 of mumps.

Within Municipal limits under our control one case of plague occurred at Rumah Miskin Police Station. There were also 7 cases of chicken-pox in various other places.

*Disinfection and Disinfectants.—*

Twelve disinfections were carried out in the rural districts and 81 in town.

The stock disinfectants was stored at the Central Sanitary Dépôt—Jalan Klapa. During the year the following were issued to various Government Offices:—

Santos—Okol	...	...	...	1,697½ Gallons.
Kerosene	...	...	...	272½ „
Crude Oil	...	...	...	702½ „

*Vaccinations.—*

Three thousand and two vaccinations were performed by the Government Vaccinator as follows:—

Town	...	...	...	...	18
Rural Areas	...	...	...	...	2,984
Total					3,002

with the following results:—

Perfect	...	...	...	...	2,071
Modified	...	...	...	...	176
Failed	...	...	...	...	406
Not seen	...	...	...	...	349
Total					3,002

*Sanitation.—*

The number of houses in the rural districts totalled 11,220 and 23,854 house to house inspections were made by the District Sanitary Inspectors. The scavenging and collection of all refuse, garbage and etc., were done by the Conservancy coolies under their respective mandores and all such rubbish collected was removed to the village incinerators which now number 22. In some districts the anti-malarial coolies were also employed to partly assist in clearing and cleaning the more important village drains. The amount of refuse in all districts and particularly in the Geylang District seems to grow with the increasing numbers taking up residence in the rural areas. Further transport provision will therefore be necessary in the near future to deal with this. Great importance is attached to the methods of keeping latrines in the rural districts in a sanitary condition. In consequence thereof many were demolished and many others reconstructed each being provided with a bucket.

The Geylang District is the only one in which there is a definite system of nightsoil removal.

It was commenced at the end of 1923, and has worked fairly satisfactorily, except for two periods during the year when trouble arose through a threatened strike on the part of the coolies.

Sanitary cards to the number of 1,024 were issued to the various districts. An examination of the notes made by the District Sanitary Inspectors on these, shows a considerable improvement in the matter of house hygiene.

*Lepers.*—

Out of the 3 lepers in the district of Pasir Panjang, 1 left for Calcutta for treatment, 1 was removed to the leper camp and only 1 remained in isolation at the end of the year. There are two others in isolation in the Geylang District. Seven lepers in the Paya Lebar District were arrested and sent to the male leper camp.

*General.*—

There are 6 Malay Vernacular and 15 other schools; 2 markets and 576 registered piggeries in the Rural districts. During the latter part of the year, surveys were made in connection with piggeries, cowsheds and milkvendors, coffee-shops, eating-houses and slaughter-houses for the purposes of obtaining more perfect registration than previously existed, and of bringing them all, under more direct control by the Sanitary Authority.

Owing to insufficient market accomodation at Geylang, the plans for a new market were passed during the year; building operations will be commenced early in 1925.

Building plans to the number of 232 were submitted. Of these 78 were approved, 8 rejected and 146 approved conditionally.

In town, visits to the various Government Offices numbered 720.

Dog shooting was taken over by the Police from the month of June.

During the month of May the following students attended the course for the Diploma of the Royal Sanitary Institute of London, and for the Probationer's Certificates:—

From the Straits	...	...	...	...	7
From the Federated Malay States	...	...	...	...	4
Private Students	...	...	...	...	14
					—
Total					25
					—

(One student did not attend the course but merely sat for the examination). Of these 11 satisfied the examiners for the Diploma and 4 passed the Probationer's Examination.

Detailed statements of work done and the Estimated Population by districts for the years 1922, 1923 and 1924 are appended.

(v)—ANTI-MALARIAL SECTION.

BY J. I. BEAZA, D.P.H.

A. The amount voted for Anti-mosquito Works was \$100,000, of which \$10,000 was set aside for Municipal use at Keith's swamp. The total amount expended was \$54,078.78, and of this sum \$1,487.69 was recovered for work done on properties which were privately owned.

B. DETAILS OF WORK DONE.—

(a) *Bukit Timah District.*—

(i) *Mosquito-surveys.*—Mosquito-surveys were regularly made around Bukit Panjang, Bukit Timah, Reformatory, Woodlands and along the Bukit Timah from the  $5\frac{1}{2}$ —16 mile Kranji Road. A mosquito-index of Bukit Timah Village was kept.

(ii) *Oiling*.—Oil spraying was carried out weekly over the following areas:—

- (a) For one mile around the Bukit Timah Village.
- (b) For a quarter of a mile around Reformatory School.
- (c) For a mile around the Woodlands Police Station.
- (d) For a mile around Bukit Panjang Village.

The average amount of oil used per week was:—

- 65 Gallons of Solar Oil.
- 32½ Gallons of Crude Oil.

The proportions used being 2 parts Solar Oil to 1 part Crude Oil.

Oil was provided by the Federated Malay States Railway Authorities for spraying over Railway Reserves during the first half year; since then Government oil was used and a bill was submitted each month to the Railway Health Officer for the amount of Government oil consumed.

(iii) *Drainage*.—The more dangerous breeding places were subsoil drained. Fourteen thousand six hundred and ninety feet of earthenware pipes were laid in this District.

(iv) *Labour*.—An average force of 2 Mandores, 1 Mason and 29 Coolies were employed.

(b) *Paya Lebar District*.—

(i) *Mosquito-surveys*.—Mosquito-surveys were carried out for a mile on each side of Serangoon Road from the 5½ mile to 7½ mile; around the Paya Lebar Wireless Station; along Yeo Chu Kang Road and at Tampinis.

(ii) *Oiling*.—Oil spraying was carried out for 1 mile on each side of Serangoon Road from the 5½ mile to the 7th mile and along Paya Lebar and Yeo Chu Kang Roads.

The average amount of oil used each week was:—

- 37·91 Gallons of Crude Oil.
- 75·82 Gallons of Solar Oil.

(iii) *Drainage*.—Dangerous breeding places were subsoil drained. Six thousand two hundred and thirty-five feet of subsoil pipes were laid—details of which are appended.

(iv) *Labour*.—An average force of 1 Mandore, 1 Mason and 20 Coolies were employed in this District.

(c) *Geylang District*.—

(1) *Mosquito-surveys*:—Mosquito-surveys were made along the Changi and East Coast Roads.

(2) *Oiling*.—Oil spraying was carried out at Siglap. The average amount of oil used each week was:—

- 6 Gallons of Crude Oil.
- 12 Gallons of Solar Oil.

(3) *Drainage*.—No subsoil drains were laid in this district. Breeding places of *Stegomyia* and *Culicine* mosquitoes were mainly dealt with.

(4) *Labour*.—1 mandore and 25 Coolies.

(d) *Pasir Panjang District*.—

(1) *Mosquito-surveys*.—Mosquito-surveys were carried out along the Pasir Panjang Road from the 4½ mile to the 8th mile and at the Government Bungalow at Labrador.

(2) *Oiling*.—Oil spraying was carried out for a mile around the Government Bungalow and along Pasir Panjang Road. The average amount of oil used each week was:—

5 Gallons of Crude Oil.  
10 Gallons of Solar Oil.

(3) *Drainage*.—(a) Subsoil pipes were laid at Labrador and at Messrs. HAMMER and Company's Reservoir. Four hundred feet of pipes were laid.

(b) Valuable work was done in reducing the number of Culicine and Stegomyia mosquitoes.

(4) *Staff*.—An average force of 1 Mandore and 15 Coolies were employed.

(c) *Selctar District*.—

(1) *Mosquito-surveys*.—Mosquito-surveys were carried out along Seletar Road and at the Naval Base.

(2) *Oiling*.—Oil spraying was carried out weekly when necessary for a mile around the Woodlands Police Station. The average amount of oil used each week was:—

5½ Gallons of Crude Oil.  
10⅔ Gallons of Solar Oil.

(3) *Drainage*.—Dangerous breeding places were subsoil drained. Four thousand one hundred and twenty-eight feet of subsoil pipes were laid.

(4) *Labour*.—Twenty Masons and 161 Coolies were employed at the Naval Base for 12 days.

(f) *Singapore City*.—All work within Municipal Limits ceased on October 19th; and a record of work done up to that date is appended.

(1) *Mosquito-surveys*.—Mosquito-surveys were carried out regularly over the following areas:—

- (a) General Hospital.
- (b) Tan Tock Seng Hospital.
- (c) Fort Canning and Pearls Hill.
- (d) Goodwood Hill and Nassim Hill.
- (e) Tanglin Hill and Mount Rosie.
- (f) Government Hill.
- (g) Government Buildings.

(2) *Oiling*.—Oil spraying was carried out over the following areas:—

- (a) Government Hill.
- (b) Tan Tock Seng Hospital.
- (c) Mount Rosie and Nassim Hill.
- (d) General Hospital.
- (e) Fort Canning and Pearls Hill.
- (f) Nassim Hill and Goodwood Hill.

The average amount of oil used each week was:—

103 Gallons of Solar Oil.  
59 Gallons of Crude Oil.

(3) *Drainage*.—Dangerous breeding areas were subsoil drained. Five thousand three hundred and twenty-nine feet of subsoil pipes were laid—details of which are in the statement appended.

(4) *Indices*.—Indices were kept of the following areas:—

- (a) Government Hill.
- (b) Nassim Hill.
- (c) Goodwood Hill.
- (d) Fort Canning.
- (e) General Hospital.
- (f) Mount Rosie.
- (g) Tan Tock Seng Hospital.

(5) *Labour*.—An average force of 5 Mandores and 46 Coolies were employed.

(g) *Central Sanitary Dépôt, Jalan Klapa*.—

The laboratory was used throughout the year for the identification and preparations of specimens and for minor researches in connection with the destruction of larvæ of all prevalent types.

(h) *General*.—

The two Sanitary districts of Bukit Timah and Serangoon still remain our worst malarial centres.

It is interesting to note that in Bukit Timah, there has been a considerable reduction in the number of these cases throughout the current year, except during the month of November.

A corresponding reduction has taken place in Serangoon, except during the months of June and December, when the 1924, figures are seen to be slightly in excess of those of 1923.

As all these cases dealt with, have been diagnosed by microscope and by the examination of the spleen, the figures are dependable, and show that some improvement is taking place as a result of the expenditure on permanent anti-malarial works, and further indicate that permanent drainage schemes should be pursued in order to extend the perimeter of Protected areas.

At the commencement of permanent drainage works in the rural areas in 1922, it was found that the rural areas furnished the major portion malarial cases for Singapore island. The great reduction in deaths from malaria is doubtless of some significance, but cannot be entirely relied upon, for the reasons that, there are always a number of persons who having contracted malaria in the rural districts have come to the hospitals in Singapore to die inside Municipal Limits.

#### STATEMENT G. APPENDED IS INTERESTING FOR TWO REASONS.

(1) It shows that the malarial cases from the Bukit Timah District admitted into Singapore Hospitals have increased by 17 per cent over 1923, the cause for which presumably is that the district population frequents the out-door dispensary more and follows advice to submit to treatment in Hospital.

(2) That the number of cases per 1,000 of the Bukit Timah population is 107.5 as compared with 134.2 in 1923, a reduction of 20 per cent.

By reference to Statement H. appended it will be seen that these Malarial admissions into Hospital with the exceptions of Geylang, Paya Lebar and Pasir Panjang, have increased since 1923. This is particularly marked in the case of Pulau Ubin, where every attempt is made to encourage the population to enter Hospital for treatment.

The total Serangoon cases show a very considerable improvement on last years returns.

*Maintenance.*—

It has been found, while inspecting drainage works carried out, in previous years, with *cement drain pipes*, that these have in most cases, shown, considerable deterioration, probably due to the nature of the soil; and since the 2nd quarter of this year, therefore, the more lasting baked clay pipes have been used instead. The initial cost of the latter type is greater—but their greater lasting powers, will compensate for the greater first cost.

The question of maintaining drainage works in good order, is of great importance, especially where such works have been carried out on private properties. Constant supervision and inspections of these drained areas are necessary, in order that breaches due to flood water and other causes may be repaired without delay.

Such maintenance calls for a certain amount of expenditure annually, which is a fair charge against the Anti-mosquito Vote.

(vi)—CHILD WELFARE WORK.

Child Welfare work in Singapore may be said to have begun with the efforts of the late Dr. MIDDLETON, Municipal Health Officer, to regularise midwifery work in the town.

This work has gradually grown as the Municipal activities extended.

Considerable impetus to the movement has been given by the formation of the Child Welfare Society of Singapore which was incorporated in 1923 under the Companies Ordinance with Lady GUILLEMARD as President.

The Society's Centre is situated at 49, Jalan Besar, where the roll of children attending numbered more than 250 at the end of the year.

The Society was fortunate in securing the services of a trained matron Mrs. WATKINSON, who was engaged in welfare work for 12 or more years with the Westminster Corporation.

The attendances for November and December, totalled 747 and the Government has recognised the value of the work by the grant of a donation of \$1,000.

(vii)—VENEREAL DISEASE CLINICS.

The good work at the two centres—North Canal Road and Tanjong Pagar was continued throughout the year.

Appendix F. contains the Report of the Health Officer (Venereal) for the year, accompanied by various graphs and tables.

The graphs will show that the increase of attendances, over those of the previous year, is quite marked.

The provision of another clinic at the other end of the town is being made.

(viii)—METEOROLOGY.

The Climatological Summaries for the various Settlements will be found in Appendix C.

Alterations to the Kandang Kerbau Hospital for Women and Children necessitated the removal of the old Singapore station which had occupied that compound for so long.

Temporary accommodation was provided at the periphery of the Government House domain, near the Bukit Timah Road Filter Beds, but it is hoped that a suitable site will soon be provided for the establishment of a station worthy of the needs of this prosperous port.

The excessive rainfall during February is the only point of especial interest—February being usually the driest month of the year in this Settlement

	Pasir Panjang. District C.	Bukit Timah. District D.	Seletar. District E.	Paya Lebar. District F.	Geylang Siglap District G.	Town.	Total.
1. No. of Houses ...	2,451	1,623	1,510	2,361	3,150	125	11,220
2. „ Police Stations ...	3	3	1	1	4	20	32
3. „ Vernacular and Other Schools ...	1	Nil	Nil	Nil	5	...	6
4. „ Markets ...	2	1	5	2	5	16	31
5. „ Incinerators ...	Nil	Nil	Nil	Nil	2	...	2
6. „ Registered Piggeries ...	5	3	3	5	6	...	22
7. „ Malarial admissions to Hospital ...	182	4	14	159	217	...	576
8. „ Plague cases ...	Nil	12	Nil	239	Nil	...	251
9. „ Cholera cases ...	„	Nil	„	Nil	„	...	Nil
10. „ Small-pox ...	„	1	„	„	1	...	2
11. „ Measles ...	„	Nil	„	„	1	...	1
12. „ Other Infectious Diseases ...	„	„	„	9	Nil	...	9
13. „ Deaths ...	1	„	„	4	1	8	14
14. „ Births ...	Nil	„	„	Nil	Nil	...	1,957
15. „ Deaths under 1 year ...	„	„	„	„	„	...	2,641
16. „ Disinfections ...	4	1	1	3	3	81	567
17. „ Leprosy cases ...	3	Nil	Nil	7	2	...	93
18. „ Visits to Government Offices ...	Nil	„	„	Nil	Nil	720	12
19. „ Sanitary Cards ...	150	150	150	224	350	49	720
20. „ Vaccinations ...	541	476	179	493	1,295	18	1,073
21. „ Inspections ...	4,500	15,000	2,100	1,174	1,080	...	3,002
22. „ Notices Served ...	29	24	12	59	22	...	23,854
							146

## POPULATION.

	1922.	1923.	1924.	Yearly increase.
Pasir Panjang ...	7,931	8,162	8,393	231
Bukit Timah ...	10,088	10,376	10,664	288
Seletar (excluding Woodlands) ...	8,046	8,280	8,514	234
Woodlands ...	412	424	436	12
Paya Lebar (excluding Pulo Ubin and Geylang Serai) ...	1,323	12,661	12,999	338
Pulo Ubin ...	2,584	2,668	2,752	84
Geylang Serai ...	2,076	2,146	2,216	70
Siglap ...	17,388	18,240	19,092	852
Marine ...	9,584	9,904	10,224	320
Totals ...	70,432	72,861	75,290	2,429

Average :—6 Mandores and 64 Coolies (Conservancy).

THE FOLLOWING STATEMENTS ETC. ARE APPENDED.

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- (a) Larval survey. Monthly indices for 1924.
- (b) Details of work done in Bukit Timah in 1924.
- (c) Details of work done in Serangoon in 1924.
- (d) Details of work done in Singapore Town area in 1924.
- (e) Statement showing the total number of malaria cases treated in Government dispensaries and hospitals for the Bukit Timah and Paya Lebar divisions in 1923 and 1924.
- (f) Review of malaria admissions into Singapore hospitals for the years 1921 to 1924.
- (g) Record of subsoil pipes issued in 1924.

# A.—LARVAL SURVEY.

MONTHLY INDICES FOR THE YEAR 1924.

Month.	Mount Rosie			Govt. Hill.			Goodwood Hill			Nassim Hill.			General Hospital.			Bukit Timah			Tan Tock Seng Hospital.			Fort Canning.		
	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.	No. of houses.	No. infested.	Index per cent.
January	...	...	...	20	4	20	20	1	5	20	3	15	30	3	10	75	22	29.3	20	1	5	15	5	33.3
February	...	...	...	20	4	20	20	5	25	20	1	25	30	1	3.3	75	11	14.66	20	3	15	15	5	33.3
March	...	...	...	20	1	5	20	...	...	20	1	15	30	1	3.3	75	12	16	20	2	10	15	4	26.6
April	...	...	...	20	3	15	20	7	35	20	3	25	30	3	10	75	14	18.6	20	...	...	15	8	53.3
May	...	...	...	20	...	...	20	4	20	20	7	35	30	1	3.3	75	17	22.66	20	...	...	15	5	33.3
June	...	...	...	20	...	...	20	5	25	20	3	15	30	2	6.6	75	16	21.3	20	1	5	15	6	40
July	...	2	20	20	1	5	22	7	31.8	20	5	25	30	2	6.6	75	18	24	20	...	...	15	3	20
August	...	...	...	20	...	...	20	5	25	20	1	5	30	3	10	75	15	20	20	...	...	15	5	33.3
September	...	3	30	20	3	15	20	5	25	20	1	5	30	7	23.3	75	17	22.6	20	4	20	15	3	20
October	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75	14	18.6	...	...	...	...	...	...
November	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75	13	17.3	...	...	...	...	...	...
December	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75	7	9.3	...	...	...	...	...	...

## B.—DETAIL OF WORK DONE IN BUKIT TIMAH, 1924.

Place.	6"	4"	8"	Cement in Barrels.	Cement Slabs 2 x 1.	Cement Slabs 2 x 2.	C. Inverts 12 x 2.	Inverts 2 x 9.	Inverts 2 x 18.	Solar Oil.	Crude Oil.
Town ...	2,544	800	1	..	1	...	2	77	1	...	...
Reformatory ...	500	...	...	...	...	...	...	...	...	...	...
Railway Area ...	950	...	...	...	...	...	...	...	...	...	...
Jurong ...	25	...	...	2	6	494	...	5	699	...	...
Stone Wall ...	...	...	...	26	...	8	2	18	...	...	...
Paya Lebar ...	400	600	...	2	...	...	...	...	...	...	...
Government Dispensary ...	70	...	...	...	...	...	...	...	...	...	...
Rifle Range ...	132	100	39	...	...	...	...	...	...	...	...
Seletar ...	150	...	...	...	...	...	...	...	...	...	...
B. Panjang R. Est. ...	523	620	...	1	...	...	...	...	...	...	...
Quarry ...	1,166	444	1,048	3½	...	192	...	...	250	...	...
Keng Chin ...	650	585	...	...	...	...	...	...	...	...	...
Broken ...	7	2	...	...	...	...	...	19	...	Distr	District
Bukit Panjang ...	...	828	...	½	...	...	...	...	...	...	...
Total issued 1924 ...	7,117	3,979	1,088	40	7	694	4	119	950	56D	28D
Balance ending 1923 ...	3,507	...	172	16	137	694	50	119	425	18D	9D
Number received 1924 ...	4,433	3,979	1,266	20	...	...	...	...	800	38	19
Balance 31/12/24 ...	823	...	350	...	130	...	46	...	275	...	...

C.—DETAILS OF WORK DONE IN SERANGOON IN 1924.

	6"	4"	8"	Slabs 2' x 2'.	Inverts 18"	Cement.	Broken Bricks.	Stakes.	Inverts 2' x 9'.	Solar Oil.	Crude Oil.
Ah Siew	...	178	612	75	...	5½	...	262	...	...	...
Dr. Chill	997	...	...	...	...	...	...	...	...	...	...
Dorasamy	78	...	...	...	...	...	...	...	...	...	...
Abdul Rahman	287	...	...	...	...	...	...	...	...	...	...
Angullia	...	27	194	...	...	...	...	...	...	...	...
Aradappa Chetty	...	400	...	...	...	...	...	...	...	...	...
Zugaette	...	1,890	...	...	...	2	3	...	...	...	...
Alsagoff	...	170	...	...	...	...	...	4	...	...	...
Dorasamy	...	233	...	...	...	...	...	6	...	...	...
Ng Choon Hee	...	200	3	...	...	1	1½	10	...	...	...
Sumapah	...	...	...	...	...	...	...	...	...	...	...
Norris	...	...	...	112	...	10½	14	425	...	...	...
Office, Jalan Klapa	...	...	...	...	...	...	...	15	...	...	...
General Hospital	...	...	2	...	...	...	...	...	...	...	...
Government Land	...	...	10	...	...	...	...	...	...	...	...
Reserve Roads	...	...	...	...	...	...	2	...	...	...	...
Broken	5	695	336	1	23	6	3	25	...	...	...
Total	5	4	14	...	31	...	...	...	...	...	...
Received	1,367	3,797	1,171	118	...	25	23½	747	...	...	...
Balance 31/12/23	1,287	3,897	...	...	...	1	...	377	77	60	30
Balance 31/12/24	114	...	2,580	226	64	28	42	1,500	...	...	...
	34	100	1,409	38	9	4	18½	630	77	4	2

**D.—DETAILS OF WORK DONE IN SINGAPORE  
CITY TOWN AREA, 1924.**

<i>Place.</i>	<i>6" Pipes.</i>	<i>4" Pipes.</i>	<i>8" Pipes.</i>
—	—	—	—
Mount Rosie ...	800	—	—
Botanical Gardens ...	1,260	800	—
Goodwood Hill ...	150	—	—
Fort Canning ...	200	100	—
Napel Road ...	110	—	—
College Road ...	184	—	—
General Hospital ...	525	400	10
McKenzie Road ...	150	—	—
Scotts Road ...	150	—	—
Warders Quarters ...	—	500	—
Total number laid ...	3,529	1,800	10
Number received from Bukit Timah ...	2,544	800	10 Received from P. L.
Number received from Contractor ...	985	1,000	—
Balance ...	—	—	—

**E.—BUKIT TIMAH DIVISION.**

*Total Malaria cases treated in Government Dispensary  
and Singapore Hospitals.*

Date.	At the General Hospital Treated.	At Tan Tock Seng Hospital Treated.	At Bukit Timah Dispensary Treated.	Number per 1,000 of the population.
1923.	138		1,254	134.2
1924.	17	145	984	107.5

**PAYA LEBAR.**

*Total cases treated in Government Dispensary and Singapore Hospitals.*

Date.	At the General Hospital Treated.	At Tan Tock Seng Hospital Treated.	At Bukit Timah Dispensary Treated.	Number per 1,000 of the population.
1923.	47		349	32.06
1924.	5	21	239	20.38

F.—A REVIEW OF MALARIA ADMISSIONS INTO SINGAPORE HOSPITALS.

District.	1921.		1922.		1923.		1924.	
	Total Cases.	No. per 1,000 of the Popn.	Total Cases.	No. per 1,000 of the Popn.	Total Cases.	No. per 1,000 of the Popn.	Total Cases.	No. per 100 of the Popn.
Pasir Panjang	15	1.9	10	1.2	8	.98	1	.12
Bukit Timah	133	13.6	166	16.5	138	13.30	162	15.19
Seletar (excluding Woodlands) <i>a</i>	14	1.8	17	2.01	33	3.9	47	5.5
Woodlands	12	30.0	10	26.1	1	2.3	5	11.2
Pulau Ubin	31	12.4	43	16.7	18	6.7	26	9.4
Paya Lebar	45	3.7	65	5.2	47	3.7	26	2
Geylang and Siglap	5	0.3	6	0.3	19	.9	7	.3

*a*—See Table A showing that although there were nine cases admitted into Singapore Hospitals in 1924, there were actually less cases treated in the Government Dispensary at Bukit Timah Village.

G.—TOTAL ANTI-MOSQUITO SUBSOIL PIPES ISSUED IN 1924.

Articles.	Balance.	Number Received.	Number issued to P. Panjang.	Number issued to Seletar.	Number issued to B. Timah.	Number issued to Paya Lebar.	Number issued to Town.	Number issued to Tan Chye Lee.	Total number issued,	Total number laid.	Balance 31/12/24.	Remarks.
4" Pipes	...	10,155	200	2,000 256 <u>1,744</u>	3,630 256 <u>3,886</u> 600 <u>3,286</u> 800 <u>2,486</u>	3,050 600 <u>3,650</u> 200 <u>3,850</u>	1,200 200 <u>1,000</u> 800 <u>1,800</u>	75	10,155	10,055	100	Balance from Paya Lebar of 100 only.
6" Pipes	3,621	7 150	200	500 150 <u>650</u>	4,432 400 <u>4,032</u> 2,444 <u>1,588</u> 150 <u>1,438</u> 100 <u>1,338</u>	883 400 <u>1,283</u>	985 2,444 <u>3,429</u> 100 <u>3,529</u>	150	7,150	6,293 3,621 <u>9,914</u>	857	Balance of 823 at Bukit Timah. 34 at Paya Lebar.
8" Pipes	2,752	3,000		2,000 266 <u>1,734</u>	1,000 266 <u>1,266</u>				3,000	3,993	1,759	Balance 31/12/24 1,409 Paya Lebar 350 Bukit Timah ... <u>1,759</u>

## II.—PENANG.

REPORT BY F. R. SAYERS, M.D., D.P.H., *Senior Health Officer, Penang.*

## A.—STAFF.

I. For Public Health Administration the Settlement outside the Penang Municipal Limits is divided into seven areas which are under the general supervision of the Senior Health Officer. These areas and the officers responsible for the routine health duties in connection with them are:—

<i>District.</i>	<i>Officer Responsible for.</i>	<i>Other duties of Officer.</i>
—	—	—
1. Penang Harbour ...	Deputy Port Health Officer	—
2. Quarantine Station, Pulau Jerejak ...	{ Assistant Health Officer (Quarantine) }	—
3. Leper Asylum, Pulau Jerejak ...	{ Deputy Medical Officer (Lepers) }	—
4. Penang Island Rural Area ...	{ Assistant Health Officer (Rural) }	{ Inspections of Vernacular Schools and Pupils within the Penang Municipal Limits.
5. Province Wellesley, Northern and Central Districts	{ Medical and Health Officer, Province Wellesley Nor- thern and Central ... }	{ Medical Officer's Duties.
6. Province Wellesley, Southern District	{ Medical and Health Officer. Province Wellesley, South }	{ Medical Officer's Duties.
7. The Dindings ...	{ Assistant Medical and Health Officer, Dindings }	{ Medical Officer's Duties.

(a) A Lay Superintendent is stationed at the Quarantine Station to relieve the Assistant Health Officer (Quarantine) of certain routine duties.

(b) The Penang Island Rural Board employs one Chief Sanitary Inspector who is in charge of the Rural Board Area. Under him are three District Sanitary Inspectors.

(c) The Province Wellesley Rural Board employs four District Sanitary Inspectors.

(d) The Dindings Rural Board employs one Sanitary Inspector.

(e) A temporary Mosquito Inspector and a temporary Mosquito Collector were appointed during the year. The Mosquito Inspector is stationed at Penang and the Mosquito Collector at Lumut. Their principal work was checking the efficiency of anti-malarial measures by a weekly search for larvæ. The remainder of their time was spent in mosquito surveys of kampongs and estates, to discover where anti-malarial measures were required.

(f) A temporary dresser and two coolies were employed by the Health Branch for work on the Penang Hills to supervise sanitation and treat sickness amongst the coolies work on the hills.

- (g) Vaccinations were performed by the Vaccinator in Penang Island Rural Area, by the Dresser in charge at Balik Pulau Hospital, by a Vaccinating Dresser (in addition to his purely Medical Duties) in each District of Province Wellesley and in the Dindings by the Dressers stationed at Lumut and Pengkalan Bharu.
- (h) In each Rural District gangs of sanitary coolies and gangs of anti-mosquito coolies were employed whose duties were in connection with village sanitation and rural anti-mosquito measures respectively.
- (i) Within the Municipal Limits the Government Health Branch is responsible only for the Inspection of Schools (English and Vernacular), Police Stations and the Labour Department's Depôt for Labourers. The Municipal Health Officers are responsible for all other health duties within these limits.
- (j) The various Health Branch posts were filled thus:—
- |  |        |   |
|--|--------|---|
| Senior Health Officer  | ...    | Dr. J. I. BAEZA—1-1-24 - 27-2-24.<br>Dr. F. R. SAYERS—28-2-24 - 31-12-24.   |
| Deputy Port Health Officer   | ...    | Dr. J. H. L. WESTERHOUT.  |
| Assistant Health Officer<br>(Quarantine)   | ... .. | Dr. P. M. MEHTA.  |
| Lay Superintendent   | ...    | E. O'SULLIVAN.  |
| Deputy Medical Officer (Lepers)  |        | Dr. A. H. WHEATLEY.   |
| Assistant Health Officer (Rural)   |        | Dr. D. C. RICHARDS.   |
| Medical and Health Officer,<br>Province Wellesley, Northern<br>and Central Districts | ...    | Dr. L. W. EVANS.  |
| Medical and Health Officer,<br>Province Wellesley, Southern<br>District              | ... .. | Dr. J. PORTELLI.  |
| Assistant Medical and Health<br>Officer, Dindings                                    | ...    | Dr. P. E. PEREIRA - 1-1-24 - 15-2-24.<br>Dr. H. MEHTA - 16-2-24 - 31-12-24. |
| Mosquito Inspector   | ...    | Mr. S. AMPALAVANAR.   |
| Mosquito Collector   | ...    | Inche MOHAMED bin ARSHAT.   |

#### B.—PORT.

- (a) Ships, crew units and passengers inspected numbered respectively 461, 57,146 and 157,790.
- (b) Fourteen were "Pilgrims Ships" bound for Jeddah with 7,674 Pilgrims on board and eleven were "Pilgrims Ships" from Jeddah with 11,032 Pilgrims.
- (c) Thirty-three were "Indian Immigrant Ships" with 43,147 Labour Department Immigrants, on board.
- (d) One hundred and thirteen were "Chinese Immigrant Ships".

(e) Ten ships arrived infected with a "dangerous infectious diseases":—

<i>Date of Arrival.</i>	<i>Ship.</i>	<i>Ports touched at.</i>	<i>Infection.</i>
24- 3-24	<i>Van Cloon</i>	Amoy and Swatow	Cerebro Spinal Fever.
9- 5-24	<i>Keat Seng</i>	Hongkong and Singapore	Small-pox.
17- 5-24	<i>Ellenga</i>	Madras and Negapatam	Cholera.
19- 5-24	<i>Elephanta</i>	Calcutta and Rangoon	Cholera.
31- 5-24	<i>Ipoh</i>	Singapore and Port Swettenham	Cholera.
13- 6-24	<i>Teesta</i>	Madras and Negapatam	Cholera.
17- 6-24	<i>Ellenga</i>	Madras and Negapatam	Cholera.
6- 7-24	<i>Ekma</i>	Rangoon	Cholera.
11- 7-24	<i>Teesta</i>	Madras and Rangoon	Cholera.
28-11-24	<i>Teesta</i>	Madras and Rangoon	Small-pox.

(f) The disinfecting launch *Kite* was in use on 14 occasions.

(g) Twelve corpses were inspected on ships or tongkangs and permits to bury them were issued afterwards.

(h) Twelve waterboats supplying the shipping of the Port were examined and were certified to be clean.

(i) Statistics of Twenty years Work L—

<i>Years.</i>		<i>Vessels.</i>	<i>Units of Crew and Passengers inspected.</i>
1905	...	869	214,136
1906	...	675	204,988
1907	...	633	219,839
1908	...	1,205	176,119
1909	...	503	161,971
1910	...	526	217,967
1911	...	1,144	277,151
1912	...	634	287,373
1913	...	818	272,473
1914	...	1,040	215,067
1915	...	405	148,662
1916	...	662	213,726
1917	...	367	203,757
1918	...	551	173,813
1919	...	493	210,839
1920	...	432	207,424
1921	...	461	197,448
1922	...	480	197,579
1923	...	442	182,349
1924	...	461	214,936

IV.—(a) Four Certificates of Disinfection, 12 Permits to Import, Export or Tranship coffins containing human remains and 703 Bills of Health were issued. For them \$3,630 were received.

(b) "Exemption Permits" were issued to 208 ships.

- (c) "Passengers Undertakings" were issued to 231 Cabin passengers from "infected ships" to secure the observation of them ashore by a Health Officer.

C.—QUARANTINE STATION.

V.—(a) The Station is designed to accommodate 5,323 inmates.

The largest number present on any one day was 2,742.

The average daily number present was 644.

The Station was empty on six days.

- (b) Twenty-eight thousand seven hundred and one people were admitted from 69 ships.

- (c) The Labour Department Immigrant "Labourers" with their relatives numbered 22,865.

- (d) Deck-passengers numbered 5,836.

- (e) From 60 non-infected ships 21,480 persons were admitted.

Of these 21,443 were released without having developed the "dangerous infectious disease" for which they were quarantined.

- (f) From 9 infected ships 46 cases of "dangerous infectious disease" and 7,175 contacts were admitted. Of these contacts 98 developed the particular "disease" for which they were quarantined while 7,077 displayed no signs of it.

VI.—(a) *Hospital Statistics* :—

<i>Disease.</i>			<i>Cases treated.</i>	<i>Deaths.</i>
—			—	—
Cerebro-Spinal Fever	...	...	—	—
Chicken-pox	...	...	31	—
Cholera	...	...	151	68
Dysentery	...	...	195	4
Enteritis	...	...	49	3
Influenza	...	...	171	11
Malaria	...	...	187	—
Measles	...	...	37	2
Plague	...	...	—	—
Pneumonia	...	...	52	22
Small-pox	...	...	—	—
Other Diseases	...	...	591	3
Total			1,464	113

- (b) Of the Cholera cases 46 were admitted from ships, of which 26 died (56.52 per cent) and 105 were developed at the Station, of which 42 died (40.00 per cent).

- (c) Dr. TOMBS "Essential Oils" were given as a prophylactic to 1,636 Cholera contacts (of these 94 were immediate contacts). Amongst them 5 cases developed.

VII.—(a) Vaccinations numbered 25,779. The percentage of success for primary vaccinations was 80.71.

(b) Carbon-Tetrachloride in doses of minims 5 to minims 60 (according to age) was administered to all the Labour Department Immigrants.

VIII.—(a) The total rainfall was 2,531.00 mm.

(b) The freshwater supply continued to be ample. Routine analyses showed a continued excellence.

IX.—(a) A pump was placed on the Jetty for the disinfection of "Flats" and Lighters after conveyance of Immigrants and Deck-passengers to the Station.

(b) Four new camps to accommodate 25 inmates each were completed.

(c) The replacement of the salt water by fresh water for bathing purposes was effected.

X.—(a) Anti-malaria measures progressed during the year. Laying of subsoil pipes was slow and difficult owing to the rocky and hilly nature of the sites.

(b) Amongst the staff and their families numbering in all 134 there were 2 fresh cases of Malaria, as compared with 6 in 1923.

#### STATISTICS OF TWENTY YEARS' WORKS.

Years.	Number admitted.	Average daily number of inmates.	Cases of Cholera.	Cases of Influenza.	Cases of Plague.	Cases of Small-pox.	Vaccination performed.
1905 ...	10,406	171	1	...	...	10	No record.
1906 ...	23,288	461	8	...	2	16	6,490
1907 ...	17,650	116	24	...	1	4	5,652
1908 ...	21,875	366	9	...	2	51	5,691
1909 ...	23,059	359	2	...	1	25	5,614
1910 ...	71,876	1,584	33	...	2	62	12,205
1911 ...	34,957	3,740	387	...	1	109	63,988
1912 ...	55,493	1,111	4	...	4	75	38,297
1913 ...	53,937	120	12	...	1	11	37,276
1914 ...	49,399	116	9	...	...	171	32,609
1915 ...	23,176	487	...	...	...	3	21,562
1916 ...	42,736	817	1	8	...	11	36,806
1917 ...	37,559	820	12	...	...	11	36,808
1918 ...	33,481	720	80	98	...	7	29,536
1919 ...	50,733	1,189	264	344	...	6	39,941
1920 ...	43,733	932	8	596	...	4	41,230
1921 ...	14,653	353	3	39	...	42	10,377
1922 ...	31,247	567	...	179	...	6	26,675
1923 ...	24,129	479	9	84	...	2	23,359
1924 ...	28,701	634	151	170	...	...	25,779
Total ...	692,088	15,142	1,018	1,518	14	626	399,895

No Cerebro Spinal Fever, Yellow Fever or Typhus Fever has occurred during the period under review.

## B.—RURAL AREAS.

Rural Districts.	Estimated Population.	Total Births.	Crude Birth Rate per mille.	Total Deaths	Crude Death Rate per mille.	Total deaths infants under one year old.	Infantile Mortality per mille.
Penang Island ...	39,532(1)	1,495 (2)	37.81 (2)	1,112 (3)	28.12 (3)	242 (3)	161.87(3)
Province Wellesley ...	131,241	4,415	33.64	3,822	29.12	638	144.51
Dindings ...	14,217	404	28.41	300	21.10	58	143.56
Rural Areas of Settlement (excluding Pulau Jerejak)	184,190	6,314	33.04	5,234	26.20	938	149.98

(1) Population of Pulau Jerejak deducted. In Census Returns it is included in the North Eastern District of Penang Island.

(2) Births at Pulau Jerejak deducted.

(3) Deaths at Pulau Jerejak deducted.

## (a) Vaccinations or Re-vaccinations of Infants and Adults:

Penang Island, North-eastern District ...	...	656
Penang Island, South-western District ...	...	7,074
Province Wellesley, Northern District ...	...	2,252
Province Wellesley, Central District ...	...	1,363
Province Wellesley, Southern District ...	...	1,165
The Dindings ...	...	3,324
Total ...	...	15,834

(b) The total number vaccinated or re-vaccinated during the past five years is **64,072**.

## XII.—(a) Out-patients treated for Venereal Diseases or Yaws:—

District.	Venereal Diseases.	Intestinals Worms.	Yaws.	Total.
—	—	—	—	—
Penang Island ...	613	1,710	878	3,201
Province Wellesley, North ...	272	364	454	1,090
Province Wellesley, Central ...	270	435	952	1,657
Province Wellesley, South ...	122	462	152	736
The Dindings ...	139	176	45	360
Total ...	1,416	3,147	2,481	7,044

STATISTICS OF THE EXAMINATIONS OF SCHOOL CHILDREN IN PENANG SETTLEMENT.

Total Num- ber of Schools.	Number of children examined.	General condition not normal.	Vaccination required.	Circulatory system diseases.	Respiratory system diseases.	Skin diseases.	Eyesight not normal.	Ear diseases.	Throat and nose diseases.	Teeth decayed more than two.	Spleen enlargement.	Specific infectious diseases.
36	6,425	341	331	23	Penang Province	478	271	55	701	1,460	608	93
51	4,150	286	298	8		180	18	4	110	300	477	117
6	351	33	144	...	Dindings.		1	21	...	227	101	78
93	10,926	660	773	31	114	843	290	80	811	1,987	1,186	288

Detailed Statistics have been submitted separately.

(a) The Colonial Estimates included for the first time a vote of fifty thousand dollars for Anti-mosquito Works in the Settlement of Penang.

(b) Of this sum \$44,317.87 was spent thus:—

1. Permanent works at Penang Island (Hill Station; Waterfall Gardens; Aier Etam Village).

Pulau Jerejak (Quarantine Station; Leper Asylum).

Province Wellesley (Butterworth Village Area; Penang Wireless Station; Sungei Bakap Village).

The Dindings (Lumut Village).

2. Temporary measures at Penang Island (Hill Station; Waterfall Gardens; the villages of Aier Etam; Tanjong Tokong, Tanjong Bungah, Bayan Lepas, Telok Kumbar, Glugor, Sungei Nibong, Balik Pulau, Sungei Rusa and Sungei Batu).

Pulau Jerejak (Quarantine Station; Leper Asylum).

Province Wellesley (Villages of Butterworth and Sungei Bakap).

3. Staff (Mosquito Inspector, Mosquito Collector, Hills Station Dresser, overseer, Mandores and Coolies).

4. Equipment and materials.

(c) Mosquito surveys were made either by the Assistant Health Officer (Rural) Penang, the Mosquito Inspector or the Mosquito Collector of the following places:—

Penang Island (Hills Station; Aier Etam; Waterfall Gardens; Tanjong Tokong; Tanjong Bungah; Telok Bahang; Glugor; Sungei Nibong; Relau; Bayan Lepas; Sungei Batu and Telok Kumbar). Province Wellesley (Butterworth, Bukit Mertajam; Sungei Bakap, Bukit Toh Alang).

The Dindings (Lumut, Pundut Estate, Sandycroft Estate, Segari Estate, Ramasamy Estate, Heng Leong Estate).

Appropriate anti-malarial measures were commenced wherever necessary on the conclusion of these surveys except in water supplies or padi fields (water supplies will be piped when possible. A supply of "Paris Green" has been obtained for trial in Padi Fields, etc.).

(d) To check the efficiency of the Anti-mosquito measures and works weekly or fortnightly searches were made at Penang Island.

(Hills Station; the Waterfall Gardens; Air Etam Village; Tanjong Bungah Village).

Pulau Jerejak (Quarantine Station; Leper Asylum).

The Dindings (Lumut Anti-malarial Works).

(e) The blood of every coolie working on the Hills Station was examined by the Government Pathologist. Any coolie with malaria parasites in his blood was compelled to take a course of quinine under the personal supervision of the Hill Dresser. Of 383 examined parasites were found in 16.

(f) The Lumut anti-malarial works were started in 1919. Comparative statistics of malaria patients treated in Lumut Hospital from the Lumut drained and undrained areas for the past four years have been collected by the Assistant Medical Officer, Dindings.

These Statistics show:—

(1) The decline since 1922 in the number of patients from the drained areas seeking treatment for Malaria.

(2) The necessity for a weekly survey of the drained areas as shown by the increases in May and June, 1924 from drained areas which were due to small undiscovered seepages.

(g) Not one of the Lumut Office Staff was ill with Malaria in 1924. Formerly the proximity of ravines 4 and 5 with their many breeding places of dangerous anophelines caused many cases yearly amongst this staff.

(h) Of 69 certificates issued to Lumut Government Servants living in the drained area none was for a fresh attack of malaria. Three were for malarial relapses. Of these three the leave granted amounted to 10 days.

XVII.—(a) In the areas of the Rural Boards (with the exception of the Penang Hills Station Area) routine sanitary measures were carried out by gangs of coolies who worked under the direct supervision of the various Sanitary Inspectors.

(b) Licences were issued for cattle sheds, pigstyes, slaughter houses, markets and to milk vendors. Samples of milk were taken for analyses.

Notices were issued to abate nuisances, to clean houses to whitewash houses. Prosecutions were instituted when necessary.

(c) Pail latrines were strongly recommended to the inhabitants particularly of the larger villages. More of them were used than in former years.

(d) The Dresser allotted to Penang Hills Station Area was directly responsible for the sanitation of the area.

(e) During the year the two village areas were created in Penang Island: Gertak Sanggul and Genting. Both are in the South Western District.

In Province Wellesley, Nibong Tebal Village Area was increased.

XVIII.—(a) A "Temporary Dispensary" in charge of the Hill Dresser was opened in March for the treatment of the various staffs working on the Penang Hills Station.

(b) Serious cases were sent to the General Hospital, Penang by train and ambulance. Minor cases were treated at the Dispensary or at the lines.

(c) The Lower Station and Middle Station of the Hills Railway was visited daily by the Dresser for treatment of the Staffs.

(d) The Labour Force which averages 342 included Public Works Department, Hills Railway, Crag Hotel and Contractor's Staffs. Of these 1,548 cases were treated of which 104 were sent to Hospital where they recovered.

Fees received amounted to \$85.05.

Routine Health Inspection of Estates were continued throughout the year. The following table shows number of "Estates" of 25 or more acres in the various Districts of the Settlement:—

<i>Penang, North, Eastern District.</i>	<i>Penang, South Western District.</i>	<i>Province Wellesley, Northern District.</i>	<i>Province Wellesley, Central District.</i>	<i>Province Wellesley, Southern District.</i>	<i>Dindings.</i>	<i>Total.</i>
— 8	— 8	— 33	— 74	— 111	— 15	— 249

Details concerning the Public Health of the Settlement will be found in the reports sent in separately by the Medical Officer, Province Wellesley North and Central, the Medical Officer, Province Wellesley South, the Assistant Medical Officer, Dindings, the Assistant Health Officer (Rural) Penang and the Mosquito Inspector, Penang.

#### REPORT ON HEALTH WORK IN DINDINGS BY ASSISTANT MEDICAL OFFICER, H. MEHTA, L.M.S., SINGAPORE.

##### LUMUT ANTI-MALARIAL WORKS.

(a) The ten ravines which are situated near the village were surveyed weekly and either temporary or permanent measures instituted where larvæ of dangerous anophelines were found.

(b) The larvæ discovered were those of:—

- A. maculatus.
- A. umbrosus.
- A. leucosphyrus.
- A. kochi.
- A. vagus.

(c) The amount of oil used was 2,016 gallons which cost \$634.30.

(d) Further details will be found in the Lumut Anti-malarial Report for 1924 which has been submitted.

##### LUMUT VILLAGE.

(a) All houses were visited regularly.

Owners were warned when larvæ were found or when water receptacles were in a condition to allow breeding. Eighteen notices were issued which were all complied with.

(b) Coffee-shops and Eating-houses were visited and the articles exposed for sale were inspected.

The owner of an eating-house was prosecuted and fined for exposing for sale vegetables which were unfit for human consumption.

##### SCHOOLS.

All Malay Vernacular Schools were visited once or twice a month. The pupils were inspected and treated if necessary.

The total number of pupils seen was 351.

Scabies which was very prevalent in previous years was rarely seen in 1924.

##### RURAL.

Districts were visited monthly and treatment given to cases of Yaws, Malaria, etc.

There were 3 cases of Small-pox in Bruas District and one in Kampong Bahru. The latter was isolated in Lumut Hospital Isolation Ward, the others in their houses. No other "dangerous infectious disease" was present.

Vaccinations were performed regularly throughout the year by the Assistant Medical Officer, Dindings and the Dressers at Lumut and Pengkalan Bahru. The percentage of success was 85 which was obtained from 465 primary and 2,859 secondary vaccinations.

Mosquito surveys were made on the Lumut Sitiawan Road, at the Rifle Range, at Kampong Batu Gajah and at Telok Muroh Village.

#### STAFF.

None of the Lumut District Office Staff was ill with Malaria in 1924.

Formerly the proximity of Ravines 4 and 5 with their many breeding places of dangerous anophelines caused many cases yearly amongst the staff.

Of 69 Certificates issued to Lumut Government Servants living in the drained area none was for a fresh attack of Malaria. Three were for Malarial relapses. On these three the total leave granted amounted to 10 days.

A Mosquito Collector (temporary) for the Dindings was appointed and arrived on the 4th July, 1924. His principal duty was to inspect the Lumut Anti-malarial Works weekly. In his spare time he made surveys of Estates, etc.

#### RAVINES.

(a) Ravine No. 1 has not been drained, as routine Mosquito Surveys showed only *A. hyrcanus*, *A. aitkeni* and *A. leucosphyrus*. None of these anophelines is a dangerous carrier of malaria. Four rubber tappers lived in this ravine for most of the year. None of them developed malaria. Ravines No. 2 to No. 9 have all been subsoil piped and drained.

(b) Ravine No. 2 was surveyed weekly. A small pool which was used for bathing contained *A. maculatus*. It has been filled in. The head of the Ravine was oiled weekly.

(c) Ravine No. 3 was surveyed weekly. The left arm of this ravine required constant attention as small seepages arose after heavy showers. They were oiled when necessary. More subsoil pipes will be laid down in 1925. Some of the subsoil pipes laid down by Mr. FORBES in 1919 became choked with sand. They were cleaned and relaid.

(d) Ravine No. 4 was surveyed weekly. *A. maculatus* was found on two visits, due to chokage of a few subsoil pipes. The pipes were cleaned and relaid and the breeding places disappeared. One case of malaria was probably infected from this source. Twelve children living in the vicinity were examined. None of them had a palpable spleen.

(e) Ravine No. 5 was surveyed weekly. In the two streams which feed the Reservoir and in the Reservoir itself at the head of the Ravine *A. maculatus* was found in 1924 in contrast to 1923 when the anophelines found were *A. aitkeni*, *A. barbirostris* and *A. hyrcanus*. The entrance of *A. maculatus* was probably due to a certain amount of clearing in connection with the enlargement of the Reservoir. The open concrete drain which extends throughout the ravine is about 5 feet below the floor of the ravine. A large number of seepages were present in the banks above this drain. On two occasions *A. maculatus* was found. Oiling was done when necessary. Subsoil pipes will be laid in 1925. Five Chinese and four Malays who lived on this ravine were examined. None of them had a palpable spleen.

(f) Ravine No. 6 was surveyed weekly. No breeding places were found.

(g) Ravine No. 7 was surveyed weekly. In the two feeders of the Reservoir at the head of the ravine *A. aitkeni* were found.

A large seepage was found near the District Officer's Bungalow.

It was drained by subsoil pipes.

(h) Ravine No. 8 was examined weekly. Near the open drain which runs in the centre of the floor of the ravine seepages were present. *A. maculatus* and *A. larwari* were found in them and in hoof-marks made by cattle. Subsoil pipes drained the seepages and no more larvæ were discovered.

(i) Ravine No. 9 was examined weekly. This ravine was treated by filling in and by open drainage. It was found that the ground remained sodden. A line of subsoil pipes around the hill-foot dried the surface. Of 7 children examined who live in the vicinity only one had a palpable spleen.

(j) Ravine No. 10 was examined weekly. It has not been drained. *A. vagus* was found in the cart tracks in the earth road which runs by the foot of the ravine. *A. umbrosus* and *A. hunteri* larvæ were found in large numbers in the roadside drains. Higher up the ravine *A. maculatus* and *A. kochi* were found.

The breeding places were oiled and further breeding was prevented.

No anophelines were found in the Bakor Swamp nearby.

The Senior Health Officer has asked that this ravine and the adjoining swamp be purchased. The ravine to be filled in and drained and the swamp to be preserved untouched to prevent the entrance of *A. ludlowi* and *A. umbrosus*.

### III.—MALACCA.

REPORT BY W. M. CHAMBERS, M.D., L.R.C.P., L.R.C.S., *Acting Health Officer*.

1. *Population*.—The estimated population for 1924 was 170,294.

2. *Births and Deaths*.—The following table gives comparative figures for 1922, 1923, and 1924:—

<i>Year.</i>	<i>Estimated Population.</i>	<i>Deaths.</i>	<i>Death rate.</i>	<i>Births.</i>	<i>Birth rate.</i>	<i>Infantile Mortality rate.</i>
—	—	—	—	—	—	—
1922	... 157,240	4,128	26·25	4,992	31·75	225·96
1923	... 160,886	4,341	26·98	5,462	33·95	258·70
1924	... 170,294	4,299	25·24	5,834	34·26	253·34

3. *Causes of deaths*.—Two principal causes of deaths were Malarial-fever 20 per cent, Unspecified-fever 12 per cent.

The following table gives comparative figures for 1922, 1923 and 1924:—

				<i>Malarial-fever.</i>	<i>Unspecified-fever.</i>
				—	—
1922	...	...	...	765	796
1923	...	...	...	440	1,039
1924	...	...	...	868	532

The increase in the number of deaths reported as due to Malaria and the decrease in the number reported as due to Unspecified-fever is due to the more accurate diagnosis.

4. *Rainfall*.—The total rainfall was 2,323 m. m.

The wettest month was September 286 m. m.

The driest month was Junary, 63 m. m.

5. *Anti-malarial measures*.—Mosquito-surveys were carried out at Bukit Sebakor, Pringgit Hill, Relau, Machap, Sungei Udang, Asahan and Klebang. Numerous mosquito-surveys were carried out on Estates by the Medical Officers of the Malacca Agricultural Medical Board. The chief anti-malarial measures adopted were open drains, weekly oiling, and the growing of blukar in exposed ravines.

6. *Water*.—Twenty-two specimens were examined chemically.

The Municipal water supply was examined monthly, and the Bukit China Wells quarterly.

7. *Milk*.—Four samples of milk were forwarded for examination and were found free from added water.

8. *Estates*.—Seventy-two visits were made to Estates.

The activities of the Medical Officers of the Malacca Agricultural Medical Board continue to improve the health of the Estate population: there has been close co-operation between them and the Health Officer.

9. *Infectious Diseases*.—There was no case of Cholera, Small-pox, Plague, Cerebro-Spinal Meningitis, or Diphtheria.

There were 108 cases of Chicken-pox, 10 of whom were sent to the Infectious Diseases Hospital at Mata Kuching. The remainder were isolated in their own homes.

10. *Vaccination*.—Seven thousand five hundred and eighty persons were vaccinated during the year.

11. *Schools*.—Seven thousand four hundred and seventy-seven school children were examined by Dr. F. W. WOOLRABE, whose report is appended.

12. *Police Stations*.—Twenty-one visits were made to Police Stations. Anti-malarial measures were carried out at the Police Stations at Relau, Pengkalan Balak, Sungei Udang, and Machap.

13. *Dairies*.—Five Dairies were inspected.

14. *Villages*.—Forty-three visits were made to villages. Sanitary Inspectors were stationed at the following places: Malacca Town, Jasin, Alor Gajah, Merlimau and Pengkalan Balak.

15. *Sanitation*.—The Health Officer is now a member of the Rural Board and the Sanitary Inspectors are responsible to the Health Officer as well as to the District Officers for the Sanitary condition of the Rural Board areas.

There are six Sanitary Inspectors four of whom attended a course of instruction in Singapore during the year.

#### MEDICAL INSPECTION OF SCHOOL CHILDREN.

##### A. SINGAPORE SCHOOLS.

SINGAPORE BOYS' SCHOOLS—REPORT BY R. W. C. KELLY, M.R.C.S., L.R.C.P.,  
*Medical Officer in charge of Schools.*

I propose for purposes of clearness and brevity to divide this subject under the following headings:—

##### (1) *Number of boys examined:*—

English Schools	...	...	...	...	1,306
Vernacular Schools	...	...	...	...	1,103
The English Schools include	...	1.	Geylang.		
		2.	Pearl's Hill.		
		3.	Serangoon English.		
Vernacular Schools	...	1.	Kampong Glam.		
		2.	Kampong Rokok.		
		3.	Rochore.		
		4.	Sepoy Lines		
		5.	Tanglin Besar.		
		6.	Tanglin Kechil.		
		7.	Siglap.		
		8.	Tanjong Katong.		
		9.	Geylang.		
		10.	Telok Blangah.		
		11.	Kampong Jagoh.		
		12.	Padang Terbakar.		

*Note*.—In addition to the above Pulau Tekong and Beting Kusa were also examined, but figures for these are not yet available.

(2) *Dental Caries*.—In the English Schools in which the greater portion of boys are Chinese there were 910 cases of dental caries or 69·68 per cent among the numbers examined. In the Malay Vernacular Schools there were 658 boys with caries teeth out of a total of 1,103 examined or 58·65 per cent. I also attach a chart showing the age incidence relative to caries, and here it will be observed, that in both instances of Chinese and Malays the greatest havoc is produced on the temporary teeth. The curve begins to fall from the tenth to the twelfth year, after which it again rises. This secondary rise is I have no doubt due to want of cleanliness, and the consequent decay of the permanent teeth. This chart is also interesting as proving the Chinese to be much greater sufferers, than the Malays. During an inspection of schools in which the larger proportion are Chinese, one is apt to be misled in judging the incidence of caries among the Malays, but a chart such as this shows that this scourge is by no means limited to the Chinese and so we are forced to look for other factors than food or mode of living to arrive at a cause for this condition.

(3) *Enlarged Tonsils*.—This I have also charted out, to see if there was any possible relationships between this condition and Dental caries; but as will be seen this curve by no means follows that of the dental one. Among the English Schools there were 333 cases of Enlarged Tonsils as compared to 118 cases among the Malays.

(4) *Vaccination*.—Five hundred and eighty-three boys out of a total of 1,306 among the Chinese Schools required to be re-vaccinated as against 598 boys in the Malay Schools, out of a total of 1,103.

(5) *Physique*.—I have divided this up into 3 more or less arbitrary divisions for comparative purposes, *viz.* Good, Fair, Poor, though this is by no means an index for comparison with similar conditions prevailing among school children in Europe.

		<i>Good.</i>	<i>Fair.</i>	<i>Poor.</i>
		—	—	—
English Schools	...	937	203	166
Malay Schools	...	929	173	101

(6) *Defective Vision*.—There were 17 cases of Defective Vision among Malay boys as against 47 cases in English Schools.

(7) *Uncleanliness*.—This is noted principally among the smaller boys, and is subject which is better dealt with by the masters than by the school Medical Officer.

(8) *Infectious Diseases*.—

*Measles*.—There were 56 cases of measles in Pearl's Hill School in February, 1924, and the school was closed down for a period of 14 days.

*Chicken-pox*.—There was one case of Chicken-pox in Serangoon English School.

*Diphtheria*.—There were two cases of Diphtheria with one death among the boys of Gan Eng Seng School.

*Leprosy*.—There were two cases of Leprosy, one from Gan Eng Seng School and the other from Serangoon English School.

(9) *Sanitary Conditions*.—All Government and Government Aided Schools were visited and a separate report on each school was made out. I am pleased to state that a great many improvements are now apparent in the schools, and those which two years ago were a disgrace to the Colony are now as good as conditions will allow. Attached to this report will be found a summary of findings at the Medical Inspection, and this will allow of any point being found at a glance

## SINGAPORE GIRLS' SCHOOLS.

REPORT BY L. S. O'MAY, *Lady Medical Officer*.

Six Girls' Schools in Singapore were examined during the year:—

1. Fairfield Girls' School.
2. The French Convent School.
3. The Methodist Girls' School.
4. The Raffles Girls' School.
5. The Singapore Chinese Girls' School.
6. The St. Anthony's Convent School.

*Visits*.—As is customary, two visits were made to each school during the year.

*Vaccination*.—About 24 per cent of the school children who had not been vaccinated since infancy were re-vaccinated during the second visit in the latter part of the year.

*Developments since 1923 Inspections*.—

1. General Nutrition: As a whole only a slight improvement in the general condition was evident.

2. Clothing: Last year's report showed children with insufficient clothing to be 13 per cent found principally in the lower forms. No improvement in this direction was noted in 1924.

3. *Pediculi Capitis and Nits*.—Fairfield Girls' School and Singapore Chinese Girls' School remains free from this. The Methodist Girls' School is fairly free and shows little change, and the Raffles Girls' School figures record improvement. The French Convent appears considerably worse in this respect than before. St. Anthony's Convent School which showed 28 per cent of the children as affected in 1923, now has 22 per cent.

4. *Medical Attention*.—Diseased conditions such as Dental Caries, Skin Affections, and Defective Vision, had been dealt with to some extent as a result of notification to the parents by the school staff. A great deal more, however, remains to be done and constant perseverance will be necessary, both in this direction and in carrying out such measures as are possible in these schools.

Few children attended the dispensary during the year and the number obtaining medical treatment elsewhere was probably not great. This is doubtless the reason why there has been less improvement during the year than had been hoped for.

*Skin Diseases*.—Show a reduction of about one-third and could be largely got rid of if the children could be induced to continue treatment for a sufficient time.

5. *School Hours*.—In the two Convent Schools the hours are from 9 A.M. to 4 P.M., i.e., 6 hours daily, which is excessive and must be harmful. It is especially bad for the day scholars who are the larger majority. The usual hours 8 A.M. to 1 P.M., would be better. For the boarders it may be desirable to have some occupation for the afternoons, but perhaps this could be provided from the special work in sewing, etc., which the Convents do.

6. *Sanitation*.—Latrines and washing accommodation are insufficient in most of the schools.

7. *Food*.—The question of getting a meal in the middle of the day remains very difficult. Improvements have been effected. Perhaps the most satisfactory results have been obtained by continuing to use certain hawkers and supervising their wares closely. In one school the school watchman was given the task of preparing food, but this does not seem to have worked well in practice and the disappearance of competition is a serious disadvantage.

## B.—PENANG SCHOOLS.

REPORT BY F. R. SAYERS, M.D., D.P.H.

*Penang Settlement.*

Total Number of Schools.	Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased More than one	Spleen Enlarged.	Specific Infectious Diseases.
<i>Penang Island.</i>													
36 ... ..	6,425	341	331	23	95	Nil.	478	271	55	701	1,460	608	93
<i>Province Wellesley N. C. and S.</i>													
51 ... ..	4,150	286	298	8	11	Nil.	180	18	4	110	300	477	117
<i>Dindings.</i>													
6 ... ..	351	33	144	Nil.	8	Nil.	185	1	21	Nil.	227	101	78
93 ... ..	10,926	660	773	31	114	Nil.	843	290	80	811	1,987	1,186	210

N. = North. C. = Central. S. = South.

## DINDINGS.

MALAY BOYS' VERNACULAR SCHOOLS, 1924.

Names of Schools in alphabetical Order.	Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth deceased (more than one.)	Spleen Enlarged.	Specific Infectious Diseases.
Betting Luas ... ..	40	2	25	...	1	...	17	...	5	...	28	10	4
Bruas School ... ..	80	10	38	...	...	...	49	1	4	...	60	14	25
Kg. Bahru ... ..	51	3	30	...	2	...	27	...	5	...	33	17	4
Panchor ... ..	52	1	8	...	...	...	19	...	1	...	28	10	25
Pangkor ... ..	75	3	21	...	3	...	42	...	2	...	42	26	3
Sg. Baru ... ..	53	14	22	...	2	...	31	...	4	...	36	24	17
TOTAL ... ..	351	33	144	...	8	...	185	1	21	...	227	101	78

Kg. = Kampong. Sg. = Sungei.

PROVINCE WELLESLEY, SOUTHERN DISTRICT  
ENGLISH AND TAMIL SCHOOLS.

Names of Schools in Alphabetical Order.			Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased more than one.	Spleen Enlarged.	Specific Infectious Diseases.
<i>English School.</i>															
Anglo Chinese School, N. Tebal	...	...	169	4	15	2	...	...	2	3	...	10	24	12	...
TOTAL	...	...	169	4	15	2	...	...	2	3	...	10	24	12	...
<i>Tamil Schools.</i>															
Batu Kawan	...	...	31	2	3	...	...	...	2	1	...	2	2	4	...
Caledonia	...	...	35	1	4	...	...	...	...	...	...	4	2	6	...
St. Anthony Catholic	...	...	25	1	1	...	...	...	1	1	...	1	2	3	...
TOTAL	...	...	91	4	8	...	...	...	3	2	...	7	6	13	...

N. = Nibong.

PROVINCE WELLESLEY, SOUTHERN DISTRICT,  
MALAY BOYS' VERNACULAR SCHOOLS.

Name of Schools in Alphabetical Order.			Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight nor Normal.	Ear Diseases.	Teeth Deceased more than one.	Throat and Nose Diseases.	Spleen Enlarged.	Specific Infectious Diseases.
Bukit Tambun	...	...	44	2	2	...	...	...	4	1	...	4	4	8	6
Changkat	...	...	59	4	...	...	...	...	6	...	1	5	3	10	1
Nibong Tebal	...	...	75	5	...	...	...	...	4	...	...	8	4	14	1
Permatang Toh Mahat	...	...	34	4	2	...	...	...	1	...	...	3	2	14	...
Sungei Acheh	...	...	141	5	17	...	...	...	3	2	...	6	4	25	7
Sungei Bakap	...	...	83	9	4	1	...	...	8	...	...	6	4	14	1
Sungei Duri	...	...	85	6	...	...	...	...	9	1	...	6	3	16	1
Sungei Kechil	...	...	40	6	1	...	...	...	2	1	...	4	1	7	...
Tassek	...	...	97	8	2	...	...	...	6	...	...	12	4	15	...
TOTAL	...	...	658	49	28	1	...	...	43	5	1	54	29	123	17

## PROVINCE WELLESLEY.

## ENGLISH SCHOOLS.

Names of Schools in Alphabetical Order.				Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased more than one.	Spleen Enlarged.	Specific Infectious Disease.
Anglo-Chinese School	...	...	...	149	...	1	...	...	...	7	...	...	2	8	2	...
St. Anne's English	...	...	...	51	1	8	...	...	...	1	...	...	...	6	1	...
St. Marks	...	...	...	66	...	2	...	...	...	5	...	...	2	5	...	...
St. Pauls	...	...	...	11	2	4	...	...	...	...	...	...	...	...	...	...
TOTAL				277	3	15	...	...	...	13	...	...	4	19	3	...

## PROVINCE WELLESLEY CENTRAL DISTRICT.

## MALAY BOYS' VERNACULAR SCHOOLS.

Names of Schools in Alphabetical Order.				Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased more than one.	Spleen Enlarged.	Specific Infectious Diseases.
Alma	...	...	...	71	10	22	...	...	...	7	...	...	1	5	5	4
Cherok Toh Koon	...	...	...	61	4	6	...	...	...	3	1	...	2	3	1	...
Gua Prah	...	...	...	106	12	9	...	...	...	3	...	...	...	8	4	9
Juru	...	...	...	68	2	10	...	...	...	3	...	...	...	2	13	4
Jalan Bahru	...	...	...	118	7	24	...	...	...	6	...	...	2	4	22	4
Kubang Simang	...	...	...	109	3	20	...	...	...	4	...	...	6	4	5	3
Machang Bubok	...	...	...	46	2	10	...	1	...	2	...	...	1	5	1	...
Padang Menorah	...	...	...	95	10	9	...	1	...	3	...	...	...	7	6	1
Ptg. Pauh	...	...	...	91	14	10	...	3	...	3	3	1	4	6	15	5
Ptg. To Kandang	...	...	...	80	2	...	...	...	...	3	...	...	1	3	15	4
Ptg. Pasir	...	...	...	93	14	3	...	...	...	...	...	...	1	4	11	...
Sg. Rambei	...	...	...	109	2	3	...	1	...	3	...	...	...	6	6	8
Tanah Liat	...	...	...	77	12	5	...	...	...	2	...	...	2	4	7	7
TOTAL				1,124	94	131	...	6	...	42	4	1	20	61	111	49

## PROVINCE WELLESLEY NORTHERN DISTRICT.

## MALAY VERNACULAR SCHOOL, BOYS.

Names of Schools in Alphabetical Order.				Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory system diseases.	Respiratory system diseases.	Urinary system diseases.	Skin diseases.	Eyesight not Normal.	Ear diseases.	Throat and nose diseases.	Teeth deceased more than one.	Spleen Enlarged.	Specific Infectious Diseases.
Ara Rendang	...	...	...	107	13	7	...	...	...	9	...	...	4	10	2	1
Bagan Belat	...	...	...	81	5	4	...	...	...	3	1	...	2	7	18	4
Bagan Tuan Kechil	...	...	...	94	6	8	...	2	...	4	...	...	3	9	10	2
Bagan Ajam	...	...	...	61	3	3	...	...	...	3	...	...	...	6	10	...
Bagan Jeremal	...	...	...	55	3	...	...	...	...	1	...	...	2	6	7	1
Kuala Prai	...	...	...	104	16	5	1	...	...	5	...	...	3	7	8	5
Kota Aur	...	...	...	42	...	...	...	...	...	1	1	...	1	2	13	2
Lahar Minyak	...	...	...	59	1	1	...	...	...	1	...	...	1	1	13	6
Pulau Mertajam	...	...	...	110	6	5	...	1	...	4	1	...	2	5	16	...
Penaga	...	...	...	140	8	7	2	...	...	2	1	1	4	11	27	6
Permatang Bertam	...	...	...	136	18	18	2	...	...	8	...	...	3	3	7	1
Permatang Sintok	...	...	...	82	...	8	...	...	...	5	...	...	3	9	11	2
Paya Keladi	...	...	...	86	7	5	...	1	...	3	...	...	3	9	3	3
Permatang Bingai	...	...	...	54	4	...	...	1	...	...	...	...	...	6	13	...
Permatang Toh Jaya	...	...	...	97	14	3	...	...	...	5	...	...	...	6	8	6
Permatang Buloh	...	...	...	84	3	5	...	...	...	4	...	...	2	5	4	...
Sungei Tembus	...	...	...	43	...	1	...	...	...	...	...	1	...	4	12	2
Sungei Dua	...	...	...	96	2	4	...	...	...	3	...	...	5	9	1	1
Sungei Puyu	...	...	...	133	13	8	...	...	...	4	...	...	2	5	11	3
Tasik Glugor	...	...	...	80	...	4	...	...	...	4	...	...	...	6	4	3
Telok Ayer Tawa	...	...	...	87	10	5	...	...	...	8	...	...	...	10	17	3
TOTAL				1,831	132	101	5	5	...	77	4	2	40	136	215	51

## PENANG ISLAND.

## English Vernacular Schools.

No.	Name of Schools in Alphabetical Order.	Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased more than one.	Spleen Enlarged.	Specific Infectious Diseases.
1	Anglo Chinese School, Maxwell Road	475	3	11	2	4	...	...	8	...	72	71	...	...
2	Anglo Chinese School, Chulia Street	167	...	1	...	1	...	2	4	...	26	28	...	...
3	Anglo Tamil School, D. Kramat *	...	...	42	...	23	...	2	60	...	103	149	2	...
4	Convent (Girls)	749	...	2	5	...	...	...	21	...	79	83	4	...
5	Government English School	492	18	...	...	...	...	...	...	...	...	...	...	...
6	Government Girls' School *	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Hillview School *	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Penang Free School	616	6	6	4	5	...	2	49	...	75	52	...	...
9	St. Xavier's Institution	1,056	1	23	9	54	...	2	49	2	166	122	2	...
10	St. Xaxier's Branch School, Pulau Ticus *	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		3,555	28	85	20	87	...	8	191	2	521	505	8	...

\* Schools, Not Examined. " Dr. Adams states that these schools were not examined owing to press of other work".

## PENANG ISLAND MUNICIPAL AREAS.

*Malay Boys Vernacular Schools.*

Names of Schools in Alphabetical Order.	Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased (more than one).	Spleen Enlarged.	Specific Infectious Diseases.
1. Chawrasta Vernacular School ...	246	27	13	...	...	...	22	9	2	14	66	6	3
2. Carnarvon Street Vernacular School ...	56	9	10	...	1	...	16	3	1	...	14	4	...
3. Dato Kramat Vernacular School ...	157	28	16	...	1	...	28	5	5	10	51	31	8
4. Jelutong Vernacular School ...	110	23	15	1	...	...	14	5	5	7	47	23	1
5. Kelawei Vernacular School ...	119	12	18	...	...	...	22	1	...	16	47	14	1
6. Kampong Java ...	196	45	31	...	...	...	40	5	2	11	80	4	...
7. McAlister Road Vernacular School ...	68	9	12	...	...	...	11	1	2	9	16	3	...
Total ..	952	153	115	1	2	..	153	29	17	68	321	85	13
Confucian Chinese School ..	473	6	21	..	2	...	42	31	15	59	120	13	1
Total ..	1,425	159	136	1	4	...	195	60	32	127	441	98	14

## PENANG ISLAND RURAL AREAS.

## MALAY BOYS VERNACULAR SCHOOLS.

Names of Schools in Alphabetical Order.	Number Examined.	General Condition Not Normal.	Vaccination Required.	Circulatory System Diseases.	Respiratory System Diseases.	Urinary System Diseases.	Skin Diseases.	Eyesight Not Normal.	Ear Diseases.	Throat and Nose Diseases.	Teeth Deceased (more than one).	Spleen Enlarged.	Specific Infectious Diseases.
1. Ayer Itam Vernacular School ...	57	4	7	...	...	...	13	2	...	1	13	7	1
2. Bayan Lepas Vernacular School ...	109	22	7	...	...	...	25	...	1	7	34	42	4
3. Batu Maung Vernacular School ...	37	2	3	...	...	...	3	1	1	...	11	22	3
4. Batu Ferringhi Vernacular School ...	33	4	2	...	...	...	9	...	1	...	9	5	1
5. Balik Pulau Chinese School ...	69	5	8	...	1	...	2	...	...	...	23	6	...
6. Glugor Vernacular School ...	50	11	1	...	...	...	4	3	...	3	17	33	4
7. Genting Vernacular School ...	72	9	6	...	1	...	22	1	...	4	25	14	9
8. Kongsil Balik Pulau ...	69	10	12	...	...	...	24	...	3	6	23	6	3
9. Pondok Upeh ...	27	1	...	...	...	...	3	1	...	1	6	8	3
10. Pulau Betang ...	71	5	7	1	...	...	11	...	...	7	18	47	9
11. Permatang Damar Laut ...	61	7	4	...	...	...	15	...	1	...	23	44	3
12. Pulau Kra ...	29	1	3	...	1	...	2	...	...	7	12	4	...
13. Relau ...	118	18	7	...	...	...	23	...	1	...	30	46	11
14. Sungei Nibong ...	69	17	9	...	...	...	11	1	2	4	24	38	1
15. Sungei Batu ...	44	2	3	1	...	...	7	1	3	5	15	30	3
16. Sungei Rusa ...	127	4	11	...	...	...	34	2	...	1	50	39	11
17. Sungei Korok ...	98	2	6	...	1	...	19	...	...	1	44	39	5
18. St. Anthony's ...	58	1	2	...	...	...	1	...	...	3	28	1	...
19. Tanjong Tokong ...	49	3	3	...	...	...	8	...	...	2	22	11	2
20. Telok Bahang ...	45	7	2	...	...	...	7	1	3	...	18	18	...
21. Telok Kumbar ...	80	14	4	...	...	...	17	4	3	...	27	42	1
22. Titi Tras ...	73	5	3	...	...	...	15	3	2	1	22	8	5
TOTAL ..	1,445	154	110	2	4	...	275	20	21	53	514	502	79

## C. MALACCA SCHOOLS.

REPORT BY W. M. CHAMBERS, M.D., D.P.H.

Number of pupils examined ...	...	...	...	7,477
General condition: less than fair ...	...	...	...	69
Vaccination marks: absent or unsatisfactory ...	...	...	...	1,720
Cardiac Lesions ...	...	...	...	57
Skin: Scabies ...	...	...	...	286
Yaws ...	...	...	...	33
Ringworm ...	...	...	...	16
Throat and Nose Cleft palate and hare lip ...	...	...	...	6
Mouth breathing ...	...	...	...	40
Enlarged Tonsils ...	...	...	...	701
Eye Visual acuity less than 6/9 ...	...	...	...	44
Strabismus ...	...	...	...	13
Wearing glasses ...	...	...	...	11
Teeth: Decayed (A) 3 pr. less ...	...	...	...	2,649
„ (B) more than 3 ...	...	...	...	340
Spleen: Palpable ...	...	...	...	310
Anæmia ...	...	...	...	47

## D. LABUAN SCHOOLS.

REPORT BY T. C. A. CLEVERTON, M.R.C.S., L.R.C.P.

Fifty-four school boys out of 190 examined showed splenic enlargement making a percentage of 28.4 against a percentage of 11.4 last year and 16 in 1922. (Of 61 school boys at Bukit Kallam School, 43 showed splenic enlargements).

From January to December, 291 blood films for Malarial parasites were examined with 216 positive results and 75 negative results. (B. T. 9, S. T. 160, Q. 12, S. T. B. T. 18, S. T. and Q. 17 and negative 75). Three blood films for Filaria were examined with 2 positive and 1 negative results.

Two hundred and fifty-nine stools were examined with 175 positive results. Twelve Smears for Gono-cocci were examined with 8 positive results. Fifty-one Sputums were examined for T. B. with 8 positive results.

All patients admitted to Hospital had their stools examined for Anky-Ova. Out of 259 stools examined 27 showed Anky-Ova. Only 5 cases of Ankylostomiasis purely were treated in Hospital. The others are returned under other diseases, for which they were admitted. All the Ankylostomiasis cases were treated by Chenopodium.

## APPENDIX "C"

METEOROLOGICAL RETURN FOR THE YEAR 1924.

*Singapore.*

		TEMPERATURE.					RAINFALL.	WINDS.		REMARKS.		
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.		General Direction.	Average Force. Metre per second.
January	..	121.3	71.0	87.9	73.0	14.9	78.9	177.21	81	N.	2.8	} Observatory transferred to a new site.
February	...	115.8	71.7	88.2	73.4	14.8	79.4	501.29	84	N.E.	2.3	
March	...	120.1	72.4	87.8	73.3	14.5	79.2	379.01	83	N.	2.0	
April	...	121.7	72.7	88.9	74.4	14.5	80.2	94.49	79	N.W.	1.9	
May	...	128.3	73.2	88.0	74.6	13.4	80.0	170.93	83	S.	1.9	
June	...	129.1	73.2	87.6	74.8	12.8	80.0	152.58	79	S.E.	2.2	
July	...	133.2	72.7	88.2	75.7	12.5	80.8	130.48	77	S.	2.9	
August	...	131	72.8	88.6	75.8	12.8	81.0	190.46	76	S.	3.2	
September	...	...	...	...	...	...	...	306.29	...	...	...	
October	...	...	...	...	...	...	...	214.30	...	...	...	
November	...	120.8	71.3	85.3	73.3	12.0	78.2	142.98	84	N.W.	1.7	
December	...	118.9	69.3	84.9	72.7	12.2	77.7	128.76	82	N.E.	1.1	
		124.0	72.0	87.5	74.1	13.4	79.5	2,588.78	81		2.2	

*Penang and Dindings.*

METEOROLOGICAL RETURN FOR THE YEAR 1924.

		TEMPERATURE.						RAINFALL.	WINDS.		REMARKS.	
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in m.m.	Degree of Humidity.	General Direction.		Average Force.
January	...	161	68	94	68	26	82.8	111	84.2	N.W.		
February	...	161	68	92	73	19	82.3	82	87.9	N.W.		
March	...	155	69	94	70	24	82.8	320	81.3	N.W.		
April	...	152	69	94	70	24	80.5	264	89.8	N.W.		
May	...	156	68	94	69	25	81.3	195	87.6	N.W.		
June	...	150	68	94	68	26	84.7	157	83.6	S.		
July	...	153	69	93	70	23	82.3	168	81.6	S.		
August	...	154	68	93	70	23	80.1	165	85.6	S.		
September	..	150	68	92	68	24	81.7	381	85.9	S.		
October	...	158	69	92	68	24	81.5	761	86.5	N.W.		
November	...	152	69	90	69	21	81.2	283	86.8	N.W.		
December	...	152	69	91	70	21	81.9	68	84	N.		

METEOROLOGICAL RETURN FOR THE YEAR 1924.

Malacca.

		TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in m.m.	Degree of Humidity.	General Direction.	Average Force.	
January	...	123	...	89	73	16	82	63	86	N.E.		
February	...	116	...	88	73	15	82	255	88	N.E.		
March	...	122	...	89	74	15	83	146	87	N.E.		
April	...	124	...	89	75	14	84	173	87	N.E.		
May	...	121	...	88	75	13	84	171	89	N.E.		
June	...	120	...	87	74	13	83	138	89	N.E.		
July	...	118	...	87	74	13	83	222	90	N.E.		
August	...	120	...	87	74	13	83	353	88	N.E.		
September	...	112	...	87	74	13	83	286	90	N.E.		
October	...	114	...	88	74	14	83	243	89	N.W.		
November	...	113	...	87	74	13	82	102	90	N.E.		
December	...	121	...	88	73	15	82	171	89	N.E.		

METEOROLOGICAL RETURN FOR THE YEAR 1924.

Labuan.

		TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in m.m.	Degree of Humidity.	General Direction.	Average Force.	
January	...	149.9	No. instrument.	85.5	76.2	9.3	80.8	77.5	84	N. & N. E.	3	
February	...	149.6		86.6	77.3	9.3	81.9	68.0	83	N.	3	
March	...	149.1		86.7	76.8	9.9	81.7	258.5	83	N. & N. E.	2	
April	..	145.3		87.7	77.3	10.4	82.5	387.0	83	N.	2	
May	...	144.2		88.7	76.9	11.8	82.8	465.5	84	N.	2	
June	...	142.6		88.6	76.9	11.7	82.7	119.5	84	N.	2	
July	...	143.1		88.2	77.1	11.1	82.6	199.5	85	N.	2	
August	...	145.4		88.1	75.8	12.3	81.9	387.5	85	N. & N. E.	2	
September	...	145.2		86.4	75.4	11.0	80.9	667.0	87	N. & N.W.	2	
October	...	144.1		86.5	76.2	10.3	81.3	309.0	87	N.	2	Light wind many calm days-
November	...	146.2		85.7	75.1	10.6	80.4	478.2	87	N. W.	1	
December	...	145.0		83.7	74.5	9.2	79.1	321.0	90	N.W.	1	Light wind many calm days
		1749.7		1042.4	915.5	126.9	978.6	3738.2	1022		24	
		145.8		86.8	76.2	10.5	81.5	311.5	85.1		2	

## METEOROLOGICAL.

*Rainfall.*—

Penang	...	District Hospital	2954	Millimetres.
		Butterworth	2317·75	„
		Bukit Mertajam	3385	„
Province Wellesley	...	Sungei Bakap	2784	„
		Penaga	1861	„
Dindings	...	Lumut	2951·25	„

*Wettest Month.*—

Penang	...	Fort Cornwallis	Millimetres	761	October.
		Butterworth	„	448	October.
		Bukit Mertajam	„	710	October.
Province Wellesley	...	Sungei Bakap	„	410·25	March.
		Penaga	„	436	October.
Dindings	...	Pangkor	„	1220	September.

*Driest Month.*—

Penang	...	Prison	„	16	December.
		Butterworth	„	19	February.
		Bukit Mertajam	„	64	December.
Province Wellesley	...	Sungei Bakap	„	92	February.
		Penaga	„	49	December.
Dindings	...	Bruas	„	79	December.

*Average Day Temperature.*—

Penang Island	...	...	...	82·4
Province Wellesley	...	...	...	91·45
Dindings	...	...	...	89·5

*Average Night Temperature.*—

Penang Island	...	...	...	80·5
Province Wellesley	...	...	...	73·2
Dindings	...	...	...	74·04

## APPENDIX “D”

## I. SINGAPORE HOSPITALS.

## SINGAPORE GENERAL HOSPITAL.

REPORT BY JOHN GRAY, M.D., *Chief Medical Officer, Singapore.*

1. *Singapore.*—Professor J. S. WEBSTER was in administrative charge, as well as in charge of the medical side, until the 6th of December, when Dr. JOHN GRAY reverted to his substantive post.

2. *Work done.*—A comparative table from 1919 to 1924 is attached:—

Year.	Number of patients treated in 1st and 2nd Class Wards.	Died.	Percentage.	Number of patients treated in 3rd Class Wards.	Died.	Percentage.
1919	1,558	83	5·32	4,771	470	9·85
1920	1,812	91	4·96	5,925	518	8·74
1921	1,638	87	5·37	6,532	579	7·94
1922	1,832	76	4·14	6,010	451	7·50
1923	2,002	62	3·10	5,836	360	6·17
1924	2,214	90	4·07	6,465	512	7·86

3. The work of the Xray Department is steadily increasing in every branch: 3,271 radiograms were taken during the year, as contrasted with 2,907 in 1923, and 1,077 in 1922. One hundred and twenty-nine examinations of the alimentary tract after the administration of a Barium meal were undertaken as against 115 in 1923.

For the first time the number of treatments (Xray therapy) has been sufficiently large to justify recording: 220 were given during the year; amongst those treated were 4 cases of Fibroid Uterus, and 3 cases of Exophthalmic goitre, in all of which excellent results have been obtained.

Further equipment for an electro-therapeutic department has been purchased, and the work of this department commenced. There is great scope for this work in Singapore. Dr. J. S. WEBSTER was in charge throughout the year.

4. *Chief Diseases.*—The chief medical diseases treated in the wards are stated below and compared with the previous years:—

<i>Diseases.</i>		1924.	1923.	1922.	1921.	1920.	1919.
—	—	—	—	—	—	—	—
Malaria	...	414	463	542	760	977	766
Enteric Fever	...	47	27	46	68	6	65
Phthisis	...	255	161	130	217	210	209
Dysentery	{ amoebic	71	84	115	120	123	205
	{ bacillary	28	21				
Syphilis and Gonorrhœa	...	753	736	420	615	621	432
Beri-beri	...	70	62	85	90	20	65
Pneumonia (Lobar)	...	96	98	167	213	174	137
„ (Broncho)	...	69	60	106	122	152	62
Ankylostomiasis	...	293	157	401	439	172	143

*Medical report for the year 1924:—*

*Malaria.*—The number of admissions show a continuous decrease. The chief variety is the æstivo cutumnal form. Quartan Malaria is rarely seen. A large number of cases have to be returned as “Unclassified”, since the parasites could not be found in the blood and yet the cases were clinically malaria and reacted to Quinine.

*Phthisis.*—Unfortunately this disease is very prevalent in Singapore amongst the native population. It is rare to see the cases before they are in an advanced stage, and the death-rate is correspondingly high—28·5 per cent. The infection seems to be a virulent one amongst a population with a low resistance, as in many cases the fatal termination is a matter of a few weeks only. It must be borne in mind that the general conditions under which many of the patients live leave much to be desired, thus favouring its propagation.

*Venereal Disease.*—The figures show a slight increase in number of admissions. Syphilis is usually seen in the secondary stage (347 cases), the patient being forced to seek relief either by the rash or on account of some joint affection: it is surprising that so few cases of congenital syphilis are treated. There were 183 admissions for gonorrhœa and 146 for soft chancre.

*The Pneumonias.*—These are very fatal diseases amongst the native races, as shown by the death-rate which from Lobar Pneumonia is 35·4 per cent, and from Broncho Pneumonia, 40·4 per cent. The mortality chiefly occurs among the 3rd class patients, and is accounted for by the feeble resistance which the patients display towards the infection. It should be borne in mind, however, that they rarely enter hospital before the disease is well established, for example, in the case of Lobar Pneumonia with all the signs of consolidation well-marked. Various methods of treatment were

tried; the best results were obtained with Tincture of Iodine. This is given intravenously on 3 successive days (10 minims, 12 minims and 15 minims in 20 c. c. of normal saline solution). The effect of the injection is seen within 24 hours by the fall in temperature, while the patient experiences a sensation of well-being, despite the continued presence of dyspnœa and the absence of any alteration in the physical signs. The temperature falls to normal within 3 to 5 days after the commencement of the treatment but the lung condition appears to follow the usual course. The death-rate of those treated in this manner was 20 per cent.

*Dysenteries.*—Of the cases admitted approximately 60 per cent were of the amœbic variety, the rest being of the bacillary type. The verminous varieties are practically never seen in Singapore. Great stress is laid upon the immediate examination of the stools, which are examined for living amœbæ and the presence of pus cells at the earliest possible moment. If the latter are found, antidysenteric serum is given in one large dose (even 80 c. c.). This has been found to give better results than when small repeated doses were administered. At the same time the stools are always sent to the Pathologist for cultivation of the organisms, but 2 or 3 days elapse before a result is received. In order that this valuable time may not be lost the treatment is based upon the microscopical contents of the stools.

*Diabetes.*—Insulin treatment regulated by repeated blood-sugar estimation is instituted whenever possible. Unfortunately many of the patients are too poor to be able to continue the treatment after leaving hospital. In the cases treated with Insulin, excellent results were obtained. There was only one case of renal glycosuria.

5. Rapid progress has been made in the construction of the hospital during the year:—

The new Dressers' Quarters and the 3rd Class kitchen block were taken over and occupied. Block A (1st Class) is ready for occupation, and Blocks C and D (3rd Class) are practically completed. The Outram Road temple, which lay in the hollow adjacent to the hospital site, was vacated and the site filled in. The work has been commenced upon the following buildings:—

1st Class.—Administrative Block: Theatres and Kitchen.

3rd Class Female.—Block B.

3rd Class Male.—Block B.

Nurses' Quarters.—The remaining wing.

6. *Maternity Wards.*—Dr. J. S. English, Professor of Midwifery, was in charge. There were 679 admissions as compared with 567 in 1923.

The nationalities of the cases were as follows:—

			1923.	1924.
			—	—
Europeans	...	...	117	125
Eurasians	...	...	25	35
Chinese	...	...	262	332
Tamils	...	...	77	90
Sikhs and Northern Indians	...	...	37	31
Japanese	...	...	38	30
Jews	...	...	—	11
Other Nationalities	...	...	17	25
			—	—
		Total	567	679
			—	—

Nature and Number of cases treated at the Maternity Hospital, Sepoy Lines, Singapore—

Total admitted	...	...	679	Total deliveries	...	536
Primiparæ	...	...	190	Multiparæ	...	346

PRESENTATIONS.

Vertex normal	...	...	472	Persistent Occipito Pos-		
Face	...	...	1	terior	...	6
Transverse	...	...	2	Breech	...	31
				Twins	...	9

COMPLICATIONS OF PREGNANCY.

Hyperemesis	...	...	1	Vesicular Mole	...	3
Hydramnios	...	...	3	Abortions and miscarri-		
				ages	...	21

HÆMORRHAGES.

Unavoidable	...	...	7	Accidental (extl.)	...	3
P. P. H.	...	...	21	„ (intl.)	...	4

LACERATIONS OF GENITAL TRACT.

Uterus	...	...	2	Perineum	...	90
Vaginal Walls	...	...	49	Contracted Pelvis	...	4

PLACENTAL ABNORMALITIES.

Adherent	...	...	9	Prolapse of Cord	...	2
Retained	...	...	6	Presentation	...	1
Prævia	...	...	7			

ACCIDENTAL COMPLICATIONS.

Phthisis	...	...	2	Typhoid	...	1
Heart Disease	...	...	3	Measles	...	2
Ankylostomiasis	...	...	4	Dysentery	...	1
Beri-beri	...	...	4	Nephritis	...	11
Syphilis	...	...	1	Eclampsia	...	8
Malaria	...	...	3	Insanity	...	2
Erysipelas	...	...	2	Mastitis	...	4

The following operations were performed:—

Induction of Labour	...	...	4	Died	0
Episiotomy	...	...	1	„	0
Breech extraction (impacted)	...	...	2	„	1
Cleidotomy	...	...	1	„	0
Suture of Pernæal Lacerations Complete	...	...	3	„	0
Suture of Pernæal Lacerations Incomplete	...	...	87	„	0
Forceps applied	...	...	53	„	3
Internal Version	...	...	8	„	1
Bipolar	„	...	6	„	0
Cæsarean Section	...	...	5	„	0
Craniotomy	...	...	4	„	0
Manual Removal of Placenta	...	...	15	„	5

The causes of Adult deaths were:—

Post Partum Hæmorrhage ...	2	Vesicular Mole ...	2
Sepsis ...	8	Pneumonia ...	1
Extrl. Acc. Hæmorrhage ...	3	Malaria ...	1
Placenta Prævia ...	1	Enteric ...	1
Eclampsia ...	3	Endocarditis ...	1
Ruptured Uterus ...	1	Ankylostomiasis ...	2

In the cases of Post Partum hæmorrhage one was delivered before admission and was admitted moribund and died 20 minutes later. The other had an adherent placenta which was manually removed. Of the septic cases five were in labour for 2 to 3 days before admission and in three of these the vagina was aloughing before delivery. In the cases of external accidental hæmorrhage, one lived 3 hours after admission the other two dying one in 20 minutes and the other in an hour. In the case of eclampsia one was delivered before admission, the other two having a history of fits and being unconscious. The Uterus was ruptured before admission and the patient moribund. In the vesicular mole cases one had a history of hæmorrhage for 2 days before admission and died 3½ hours later, the other had been bleeding off and on for 2 months and was profoundly anæmic.

The following Gynæcological operations were performed in the Maternity Wards in addition to 30 in the General Wards:—

Dilatation ...	1	Cæsarean Section ...	5
Curettage ...	14	Resect: Ovary ...	1
Ventral Suspension ...	6	Posterior Division ...	1
Amputation of Cervix ...	3	Perinacorrhaphy ...	2
Ovariectomy ...	1	Hysterectomy ...	1
Recto Vaginal fistula ...	1	Ectopic Pregnancy ...	1
Double Salpingectomy ...	1		

Of these one died where Total Hysterectomy was performed for Vesicular mole mentioned above.

#### 7. Surgical Report, General Hospital, 1924, by C. J. SMITH, F.R.C.S.E.

<i>Pathological conditions and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
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##### *Amputations.—*

Forearm or hand ...	5	4	1	—
Foot or leg ...	4	3	—	1
Toes ...	2	2	—	—
Finger ...	4	4	—	—

##### *Operations on Muscles, Tendons, Ligaments and Muscles.—*

Lipoma ...	3	3	—	—
Suturing divided tendon ...	13	11	1	1
Suturing musclem anus ...	1	1	—	—
Removal of needle from hand ...	5	4	—	1
Stitching wound, face, etc. ...	6	6	—	—
Excision Bursa-Clecranon ...	2	2	—	—
<i>Carried forward</i> ...	45	40	2	3

<i>Pathological conditions and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<i>Brought forward ...</i>	45	40	2	3
<i>Operations on Heart and Blood Vessels.—</i>				
Aneurysm Excision of Sac. ...	3	3	—	—
Excision of varicose veins of legs ...	1	1	—	—
Arterio-sympathextomy ...	1	1	—	—
Excision—Nevus ...	1	1	—	—
<i>Operations on Lymphatic System.—</i>				
Excision of Lymphatic Glands	30	30	—	—
<i>Removal of Foreign Body.—</i>				
Foot ...	2	2	—	—
<i>Operations on Bones.—</i>				
Sequestrotomy ...	12	12	—	—
Planting fractures ...	5	5	—	—
Removal of bone plate ...	1	1	—	—
Bone Grafting ...	2	1	—	1
Plaster of Paris ...	12	11	1	—
Sarcoma bone ...	1	—	—	1
Setting fracture ...	11	9	2	—
Semi-lunar cartilage ...	2	2	—	—
Wiring or pegging fractures	6	6	—	—
Ostectomy ...	1	1	—	—
Extosis of foot ...	1	1	—	—
Manipulation of spine ...	1	1	—	—
<i>Operations on Joints.—</i>				
Reduction (old case) ...	3	3	—	—
Arthrotomy ...	1	1	—	—
Arthrectomy ...	2	1	—	1
Arthrodesis ...	3	3	—	—
Aspiration of knee-joint ...	1	1	—	—
Reduction of dislocated shoul- der ...	1	1	—	—
<i>Operations on Skull.—</i>				
Trephining ...	8	6	—	2
<i>Operations on Ear.—</i>				
Radical mastoid operations ...	6	5	—	1
Plastic ...	3	3	—	—
Removal of Papilloma ...	1	1	—	—
<i>Operations on Lips, Mouth, and Salivary Glands.—</i>				
Repair of hare lip ...	6	5	—	1
Repair of cleft palate ...	3	2	1	—
Excision of jaw ...	2	1	1	—
Excision of tongue ...	1	—	1	—
Excision of parotid tumours				
Eneucleation of tonsils and removal of adenoids ...	62	62	—	—
Diathermy, cancer of tongue ...	1	—	1	—
Diathermy, sarcoma tonsil ...	3	—	3	—
Extraction of teeth ...	12	12	—	—
Ranula ...	2	2	—	—
<i>Carried forward ...</i>	259	237	12	10

<i>Pathological conditions and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<i>Brought forward</i> ...	259	237	12	10
<i>Operations on Oesophagus.—</i>				
Oesophagoscopy ...	3	2	1	—
Removal of Dental Plate ...	1	—	—	1
<i>Operations on Trachea.—</i>				
Tracheotomy ...	1	1	—	—
Stricture dilated ...	2	1	1	—
<i>Operations on Nose and Sinuses.—</i>				
Turbinectomy ...	14	14	—	—
Submucous resection of septum	7	7	—	—
Opening Maxillary Antrum ...	7	7	—	—
Cauterising nasal septum ...	1	1	—	—
Diathermy, Rhinosporidium ...	1	1	—	—
Nasal Polypus ...	7	7	—	—
Frontal sinus ...	1	1	—	—
<i>Operations on Eyes.—</i>				
For Pterygium ...	1	1	—	—
Plastic for entropion ...	2	2	—	—
Excision lachrymal sac. ...	2	2	—	—
Ireductomy ...	4	—	4	—
Extraction of cataract ...	1	1	—	—
Eneucleation of eye ...	5	5	—	—
Symblepharon ...	1	1	—	—
Trephining cornea ...	1	1	—	—
<i>Operations on breast.—</i>				
Excision of adenoma ...	2	1	—	1
Complete amputation ...	5	5	—	—
Abscess ...	1	1	—	—
<i>Operations for Hernia.—</i>				
Radical cure of hernia ...	30	30	—	—
For strangulated hernia ...	7	5	—	2
Secondary suture of abdominal hernia ...	1	1	—	—
<i>Abdominal Operations.—</i>				
Exploratory Laparotomy ...	13	7	2	4
Gastrotomy ...	2	1	—	1
Gastrectomy ...	1	—	—	1
Gastrotomy c. excision of pylo- ric ulcer ...	1	1	—	—
Fœcal fistula ...	5	5	—	—
Gastro-jejunostomy ...	4	2	1	1
Umbilical hernia ...	1	1	—	—
Liver abscess, opening and drainage ...	5	3	—	2
Liver, cancer of ...	1	—	—	1
Cholecystectomy ...	9	7	—	2
Intestinal Anastomosis ...	3	3	—	—
Acute and chronic appendec- tomy ...	91	85	—	6
Meckel's Diverticulitis ...	1	—	—	1
<i>Carried forward</i> ...	504	450	21	33

<i>Pathological conditions and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
—	—	—	—	—
<i>Brought forward</i> ...	504	450	21	33
<i>Abdominal Operations—Contd.—</i>				
Colotomy ...	1	—	1	—
Splenectomy ...	1	1	—	—
Stab-wound abdomen ...	7	3	—	4
Laparotomy for imperforate anus ...	3	3	—	—
Perforation intestine typhoid ...	3	—	—	3
Sarcoma retro-peritoneal ...	1	—	—	1
Division of Lane's band ...	1	1	—	—
Resection of intestine ...	—	—	—	—
Acute Intestinal obstruction ...	1	—	—	1
Pseudo-Myxoma ...	1	—	1	—
<i>Operations on Rectum and Anus.—</i>				
Excision of hæmorrhoids ...	19	18	—	1
Partial excision of rectum ...	1	—	1	—
Ischio-rectal abscess ...	19	19	—	—
Rectal polypus ...	1	—	1	—
Sigmoidoscopy ...	6	3	3	—
Imperforate anus ...	2	1	—	1
<i>Operations on Kidneys, Ureters and Bladder.—</i>				
External urethrothomy ...	5	5	—	—
Nephropexy ...	2	2	—	—
Litholapaxy ...	4	4	—	—
Suprapubic cystotomy ...	8	8	—	—
Cystoscopy ...	132	62	70	—
Sounds ...	13	3	10	—
Nephrectomy ...	6	5	—	1
<i>Operations on the Male Genera- tive Organs.—</i>				
Funiculitis ...	1	1	—	—
Amputation of penis (cancer) ...	1	1	—	—
Plastic of penis ...	4	—	4	—
Hydrocele, radical cure ...	17	14	3	—
Varicocele ...	1	1	—	—
Removal of urethral calculus ...	1	1	—	—
Prostatectomy ...	2	1	—	1
Periurethral abscess ...	1	1	—	—
Circumcision ...	19	19	—	—
Excision of superfluous skin of scrotum ...	1	1	—	—
Undescended testicle ...	2	2	—	—
Castration ...	1	1	—	—
<i>Carried forward</i> ...	792	631	115	46

<i>Pathological conditions and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
Brought forward ...	792	631	115	46
<i>Operations on the Female Gene- rative Organs.—</i>				
Ovariectomy ...	4	4	—	—
Salpingectomy ...	9	8	—	1
Laparotomy and correction of displaced uterus ...	7	6	—	1
Hysterectomy ...	14	9	—	5
Ectopic gestation, removal of	7	7	—	—
Perineorrhaphy ...	3	3	—	—
Amputation uterine cervix ...	4	4	—	—
Broad ligament cyst ...	1	1	—	—
Hymenectomy ...	3	3	—	—
Ventro-suspension ...	7	7	—	—
Examination under anæsthetic	5	5	—	—
Vesicavaginal fistula ...	1	1	—	—
Curettage ...	14	13	—	1
Ovarian fibroid ...	3	3	—	—
Colporaphy ...	3	3	—	—
Cæsarian section ...	2	2	—	—
Ovarian cyst ...	2	1	1	—
Dermoidm ovary ...	1	1	—	—
<i>Operations on Cysts.—</i>				
Sebaceous cyst ...	7	7	—	—
<i>Operations for Abscess</i> ...	56	56	—	—
<i>Operations on Nerves.—</i>				
Avulsion supra-orbital nerve ...	1	1	—	—
Alcoholic injections for trige- menal neuralgia ...	1	1	—	—
Neuroma removed ...	1	—	—	1
Obturator nerve divided ...	1	—	1	—
<i>Tumours.—</i>				
Neuroma ...	1	1	—	—
Fibroma ...	1	1	—	—
<i>Operations on the Spine and Spi- nal Cord and Meninges.—</i>				
Lumbar puncture ...	1	1	—	—
<i>Operations on the Larynx, Tra- chea and Bronchi.—</i>				
Stricture trachea dilated ...	4	—	4	—
<i>Operations of the skin and Sub- cutaneous tissues.—</i>				
Skin grafting ...	3	3	—	—
Plastic operation of toes ...	1	1	—	—
Ingrowing toe nails ...	2	2	—	—
Total ...	962	786	121	55

## FREE MATERNITY HOSPITAL.

REPORT BY J. S. ENGLISH, M.D., *Professor of Midwifery.*

During the year 1924, there were 811 admissions and 688 deliveries. With the exception of one case which was admitted dying of Acute Puerperal Septicæmia, most of the 123 patients who were discharged undelivered received ante-natal treatment.

Of the 688 deliveries 357 were males and 331 females.

Their nationalities were as follows:—

Chinese	...	...	561	Indians	...	...	3
Tamils	...	...	93	Malays	...	...	2
Sikhs	...	...	7	Jews	...	...	2
Japanese	...	...	6	Javanese	...	...	2
Eurasians	...	...	6	Siamese	...	...	2
Singalese	...	...	2	Portuguese	...	...	2

There were 7 adult and 18 Infantile deaths making a total of 25.

Causes of adult deaths were:—

Puerperal Sepsis	...	...	...	...	2
Concealed Accidental Hæmorrhage	...	...	...	...	1
Acute Septicæmia (Admitted dying)	...	...	...	...	1
General Septicæmia	...	...	...	...	1
Ankylostomiasis	...	...	...	...	1
Placenta Prævia (Admitted dying)	...	...	...	...	1

Causes of Infantile deaths were:—

Premature (including 1 hypospadiac)	...	...	...	13
Hæmophilia	...	...	...	1
Convulsions	...	...	...	1
Partial Pulmonary Atelectasis	...	...	...	3

In addition there were born infants:—

Anencephalic	...	...	...	...	1
Still-born	...	...	...	...	22
Macerated	...	...	...	...	26

Excepting for January and February, 1924, when there were only 16 beds, there were in use 19 beds during the first 9 months of the year, that is, when the hospital was in Victoria Street. There were 30 beds available for use during the last 3 months of the year, that is, from 1st October, 1924, at which date the hospital removed to its present site, Kandang Kerbau.

There were 18 cases remaining in hospital at the end of 1923. These with the 811 cases admitted during the year, made a total of 829 cases treated in 1924.

Of these a certain number suffered from the following complications of pregnancy, of labour, and of the Puerperium:—

Albuminuria	...	...	...	...	41
Miscarriage	...	...	...	...	5
Premature Labour	...	...	...	...	15
Hydramnios	...	...	...	...	5
Eclampsia	...	...	...	...	2
Placenta Prævia	...	...	...	...	7
Accidental Hæmorrhage (concealed)	...	...	...	...	1
Accidental Hæmorrhage (revealed)	...	...	...	...	2
Retained Placenta	...	...	...	...	1
Adherent Placenta	...	...	...	...	2
Post-partum Hæmorrhage	...	...	...	...	18
Puerperal Sepsis	...	...	...	...	3

In addition to these complications there were others who suffered from the following associated diseases:—

Ankylostomiasis	...	...	...	...	2
Influenza	...	...	...	...	1
Pneumonia	...	...	...	...	1
Scabies	...	...	...	...	1
General Septicæmia	...	...	...	...	1
Venereal Disease	...	...	...	...	8

Of the 672 infants delivered:—

635 were Vertex presentations.  
 27 were Breech presentations.  
 5 were Face presentations.  
 5 were Transverse presentations.

In 4 the cord was prolapsed. There were 4 twins.

Of the 672 infants delivered:—

1 was Anencephalic  
 26 were Macerated  
 22 were Still-born  
 18 died, leaving  
 605 discharged alive.

*Operations.*—

	<i>Total.</i>	<i>Relieved.</i>	<i>Died.</i>
	—	—	—
Foreceps	15	14	1
Version: Internal	6	5	1
Manual Removal of Placenta	5	3	2
Suture of Parinæum	83	82	1
Breech Extraction	27	27	0
Impacted Shoulders, Extraction	1	1	0
Craniotomy	1	0	1
Decapitation	1	1	0
Uncomplicated Vertex	544	543	1

#### TAN TOCK SENG'S HOSPITAL.

REPORT BY E. D. LINDOW, M.R.C.S., L.R.C.P.

##### 1. *Work done.*—

Remained on 31st December, 1923	...	...	694
Admitted during 1924	...	...	9,361
		Total	10,055
Discharged	...	...	8,104
Died	...	...	1,301
Remained on 31st December, 1924	...	...	650
		Total	10,055

2. The average daily number of sick was 669.73 as compared with 672.91 in 1923.

3. The percentage of deaths to total treated was 12.93 per cent compared with 13.54 in 1923.

4. The total number of deaths was 1,301, of these 192 died within 24 hours of admission. Deducting these the death-rate was 11.04 per thousand. Of these 380 or 28 per cent were due to Tuberculosis.

5. The average stay in hospital of those discharged was 19·88 days, of those dying 27·90 days and of those remaining in hospital 111·55 days.

6. *Malaria*.—The 1,526 cases were treated with 130 deaths, a rate of 8·51 per cent.

<i>Types of Malaria.</i>		<i>Cases treated.</i>	<i>Deaths.</i>
		—	—
Benign Tertian	...	228	4
Sub-tertian	...	619	81
Quartan	...	96	3
Mixed	...	71	2
Chronic	...	432	39
Unclassified (clinically Malaria)	...	80	1
		1,526	130

The blood is examined in all cases of fever; the specimens examined gave the following results:—

Sub-tertian	...	...	...	824
Benign tertian	...	...	...	260
Quartan	...	...	...	146
Mixed	...	...	...	107
Negative	...	...	...	3,597
				4,934

Seasonal Incidence. Admissions were lowest in April, 102, rose to 140 in May, and attained a maximum of 169 in September, then showing a gradual decrease to 129 in December.

7. *Dysentery*.—Number of cases treated were 447, of which 151 died giving death-rate of 33·78 per cent compared with 40·09 per cent in 1923.

<i>Types of Dysentery.</i>		<i>Cases treated.</i>	<i>Deaths.</i>
		—	—
Amœbic	...	172	64
Bacillary	...	231	69
Chronic	...	11	7
Mixed	...	15	11
Unclassified	...	18	0
		447	151

8. *Beri-beri*.—The numbers have again decreased from 483 in 1923 to 416 in 1924. The number of deaths however has gone up from 64 to 77, giving a percentage of 18·50 compared with 13·25 in 1923. 59 cases were transferred to Pasir Panjang Hospital.

Comparative figures:—

	1919.	1920.	1921.	1922.	1923.	1924.
	—	—	—	—	—	—
Cases	700	136	297	730	483	416
Deaths	78	14	75	107	64	77
Percentage Mortality	11·14	10	25·25	14·57	13·25	18·50

9. *Enteric Fever*.—40 cases were treated with 18 deaths, a rate of 45·00 per cent compared with 46·57 per cent last year.

10. *Venereal Disease*.—1,359 cases were treated compared with 1,215 in 1923, with 77 deaths compared with 91 the previous year.

			Cases.	Deaths.
Syphilis Primary	...	...	206	Nil
Syphilis Secondary	...	...	614	2
Syphilis Tertiary	...	...	539	75
			<hr/> 1,359	<hr/> 77
Chancroid	...	...	361	Nil
Gonorrhœa-urethritis	...	...	128	Nil
Other manifestations	...	...	62	Nil

*Treatment of Syphilis*.—Organic arsenical preparations were used in conjunction with mercury. The latter was given by mouth, by inunction and by intramuscular injection. Injections of arsenical preparations were given as follows:—

N. A. B.	...	...	...	577
Neosalvarsan	...	...	...	1,226
Sulpharsenol	...	...	...	321
Stabilarsan	...	...	...	30

11. *Helminthiasis*.—As a routine, all stools of patients were examined microscopically on admission, a smear being taken with the following results:—

Ankylostoma Ova	...	...	...	1,272
Ankylostoma Ova and Round-worm	...	...	...	264
Ankylostoma Ova and Whip-worm	...	...	...	551
Ankylostoma Ova and Whip and Round-worm	...	...	...	108
Round-worm only	...	...	...	793
Round-worm and Whip-worm	...	...	...	398
Whip-worm only	...	...	...	1,228
Negative	...	...	...	4,382
				<hr/> 8,996

Percentage of infection with:—

Ankylostomes	...	...	...	24.4%
Round-worms	...	...	...	17.4%
Whip-worms	...	...	...	25.4%

The total number of stools examined was 10,527, with results appended:—

Ankylostoma Ova	...	...	...	1,414
Ankylostoma Ova and Round-worm	...	...	...	274
Ankylostoma Ova and Whip-worm	...	...	...	579
Ankylostoma Ova and Whip and Round-worm	...	...	...	222
Round-worm Ova	...	...	...	839
Round-worm and Whip	...	...	...	412
Whip-worm Ova	...	...	...	1,334
Amœbic	...	...	...	119
Clonorchis Sinensis	...	...	...	6
Negative	...	...	...	5,328
				<hr/> 10,527

12. *Ankylostomiasis*.—There were 494 cases where Ankylostomiasis was the principal disease with 34 deaths: a rate of 6.88 per cent compared with 5.77 per cent in 1923.

Treatment of Ankylostomiasis: Following upon the investigations carried out the previous year, carbon tetrachloride was used almost exclusively in the treatment of this condition. The results were very satisfactory; the patients prefer it to the chenopodium treatment owing to the omission of preliminary preparation.

The figures showing results are appended:—

	<i>No. of cases.</i>	<i>Average No. of worms.</i>	<i>Cured.</i>
One dose Carbon Tetrachloride ...	489	48.79	81.4%
Two doses Carbon Tetrachloride ...	78	112.11	87.0%
Three doses Carbon Tetrachloride	13	150.53	85.0%
One dose Oil Chenopodium ...	77	28.55	87.0%

Two patients were particularly resistant and were not cured after four doses of Carbon Tetrachloride and one of Oil of Chenopodium. The largest number of worms passed by one patient was 564 after Carbon Tetrachloride. The cases of death were carefully examined; in no instance was the fatal issue caused or hastened by the drugs used.

13. *Tuberculosis*.—712 cases were treated, of which 654 were pulmonary. 380 patients died giving a death-rate of 53.37 per cent compared with 53.53 per cent the previous year.

14. *Ulcers*.—942 cases came under treatment, which is generally of a very tedious nature owing to the advanced state in which these patients were admitted. 270 cases were treated with intravenous injections of Tinct. Iodi  $2\frac{1}{2}$  per cent, 1 cc in 10 cc distilled water. The great drawback to this method is that only a few injections can be given owing to the venous thrombosis which occurs. Better results were anticipated, but the worst cases undoubtedly showed improvement.

15. *Plague*.—3 cases were admitted, 2 Bubonic, 1 Septicæmic. 1 died, 2 were transferred to the Middleton Hospital.

16. *Medico-Legal*.—63 bodies were sent by H. M. Coroner for post mortem examination. 17 cases died on their way to hospital, and 1,410 cases were brought in by the Police for treatment: 229 of these were for observation for insanity, of which 130 were certified.

17. *General*.—All wards are now lined inside the roofs, greatly improving their comfort. A Thresh disinfecter was installed during the year, for thorough treatment of clothing. Great progress was made with the water-carriage sewage system, which will be completed very shortly. Ward 1 has been closed with expanded metal, and will be used for acute bowel infections; it is to be made fly-proof, thus minimizing the risk of infection.

18. *Dressers*.—The dressers received instruction in all branches of their work, and examinations were held regularly.

19. *Dressers Examinations*:—

Passed for Grade I	...	...	...	1
Passed for Grade II	...	...	...	2
Passed for Grade III	...	...	...	7
Passed special course in Laboratory work			...	13
Passed Post-mortem course ...		...	...	12

20. Dr. E. D. LINDOW was in charge during the year.

Dr. W. M. CHAMBERS was in surgical charge until March 12th, 1924, when he was relieved by Mr. K. BLACK, F.R.C.S., England.

## SURGERY.

TAN TOCK SENG HOSPITAL.

REPORT BY PROFESSOR K. BLACK, F.R.C.S., (ENGLAND), FOR  
THE YEAR 1924.

<i>Operations.</i>	<i>Total.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
1. <i>Face, Mouth and Jaws.—</i>				
Excision tongue ...	4	4	—	—
Cleft lip ...	1	1	—	—
Extraction teeth ...	4	4	—	—
2. <i>Skull and Brain.—</i>				
Trephine ...	2	1	—	1
Mastoiditis ...	2	2	—	—
3. <i>Eye.—</i>				
Evisceration ...	3	3	—	—
Cataract ...	10	10	—	—
Iridectomy ...	4	4	—	—
Entropion ...	7	7	—	—
Cauterization ...	5	5	—	—
Paracentesis ...	1	—	1	—
Removal foreign body ...	1	1	—	—
Needling lens ...	1	1	—	—
4. <i>Nose and ear.—</i>				
Maxillary Antrum Suppuration ...	2	—	2	—
5. <i>Neck.—</i>				
Incised wounds of throat ...	6	5	—	1
6. <i>Thorax.—</i>				
Empyema, resection rib ...	2	—	—	2
7. <i>Abdominal Operations.—</i>				
Exploratory Laparo- tomy ...	18	9	2	7
Exploratory Laparo- tomy for peritonitis ...	4	—	—	4
Exploratory Laparo- tomy stab wounds with penetration stomach, bowel ...	5	—	—	5
Exploratory Stab wounds with wound liver spleen, etc. ...	1	—	—	1
Cholecystotomy ...	10	2	2	6
Cholecysto-enteros- tomy ...	1	1	—	—
Choledochotomy ...	1	—	—	1
Hepatotomy ...	1	1	—	—
Splenectomy ...	2	1	—	1
Gastro-jejunostomy ...	9	1	2	6
Ileo-Sigmoidostomy ...	1	—	—	1
Colostomy ...	2	1	—	1
Resection of intestine ...	2	1	—	1
Appendectomy ...	5	4	—	1
Paracentesis ...	1	1	—	—

<i>Operations.</i>	<i>Total.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<b>8. Genito-Urinary.—</b>				
Cystoscopy ...	23	23	—	—
Supra-pubic cystotomy for calculus ...	3	2	1	—
Paracentesis of bladder	2	2	—	—
Amputation of penis ...	1	1	—	—
Internal Urethrotomy	1	1	—	—
Dilatation of urethral stricture ...	21	17	4	—
Castration ...	4	4	—	—
Hydrocele ...	14	14	—	—
Circumcision ...	56	56	—	—
<b>Rectum and Anus.—</b>				
Excision of rectal cancer ...	1	—	1	—
Excision of Hæmorrhoids ...	22	20	2	—
Fistula in Ano ...	3	3	—	—
Anal Abscess ...	8	8	—	—
Sigmoidoscopy ...	2	2	—	—
<b>Hernia.—</b>				
Inguinal ...	19	19	—	—
<b>Extremities.—</b>				
<b>A. Amputations—</b>				
Limbs ...	8	6	—	2
Fingers and toes ...	15	15	—	—
<b>B. Bones and joints—</b>				
Plating fractures ...	4	4	—	—
Wiring fractures ...	2	2	—	—
Reducing dislocation ...	3	3	—	—
Sequestrotomy ...	4	3	1	—
Manipulation and set- ting fractures ...	10	6	4	—
<b>C. Vessels and nerves—</b>				
Arterial ligature for aneurism ...	4	4	—	—
Arterio Sympathectomy	9	9	—	—
Venesection ...	1	—	—	1
Excision of aneurysmal sac ...	1	1	—	—
<b>D. Lymphatic System—</b>				
Excision of inguinal glands ...	7	7	—	—
Excision of cervical glands ...	7	7	—	—
Sarcomatous gland ...	2	2	—	—
<b>E. Muscles and tendon ...</b>				
	—	—	—	—

<i>Operations.</i>	<i>Total.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
F. Skin, Subcutaneous tissues and Bursæ—				
Skin grafting ...	17	17	—	—
Excision cysts ...	12	12	—	—
Incisions for cellulitis and abscess ...	322	319	3	—
Scraping sinuses, ulcers, etc. ...	187	182	5	—
Incised and lacerated wounds ...	263	263	—	—
Removal foreign bodies	2	2	—	—
	<hr/>	<hr/>	<hr/>	<hr/>
Total ...	1,179	1,105	32	42
	<hr/>	<hr/>	<hr/>	<hr/>

Total Major Operations 172.

Total Minor Operations 1,007.

#### BERI-BERI HOSPITAL, PASIR PANJANG.

REPORT BY E. R. STONE, M.B., B.Ch., *Medical Officer in charge.*

1. There remained on 31st December, 1923, 70 patients.
2. During 1924, 65 were admitted giving a total treated of 135.
3. Of this number 52 were discharged relieved, 32 left and 8 died.
4. There remained on 31st December, 1924, 43 patients.
5. The average daily number was 52·01.

#### BLIND WARD, PASIR PANJANG.

1. There remained on 31st December, 1923, 39 patients.
2. During 1924, 11 males were admitted.
3. Of this number 1 was transferred, 1 was discharged, 13 left and 6 died.
4. There remained on 31st December, 1924, 29 patients.
5. The 11 admissions consisted of Corneal opacity 9, Optic atrophy 1, Iritis 1.
6. The average daily number was 37·01.
7. A small amount of broom making was carried on.

#### II.—PENANG HOSPITALS.

REPORT BY W. A. TAYLOR, M.B., Ch.B., *Chief Medical Officer, Penang.*

*Population.*—The Estimated population of Penang Island is 170,383, for Province Wellesley 131,241 and for the Dindings 1,217.

*Births.*—The number of births recorded for Penang Island was 5,752, for Province Wellesley 4,415 and for the Dindings 404.

The nationalities being:—

		<i>Penang Island.</i>	<i>Province Wellesley.</i>	<i>Dindings.</i>
European	...	63	—	—
Eurasian	...	44	11	—
Chinese	...	3,500	1,247	87
Malay	...	1,453	2,570	206
Dravidian	...	582	573	111
Other Indian (Northern)	...	51	4	—
Others and Unknown	...	58	10	—

*Deaths.*—The number of deaths recorded for Penang Island 5,166, for Province Wellesley 3,822 and for the Dindings 300.

The nationalities were:—

		<i>Penang Island.</i>	<i>Province Wellesley.</i>	<i>Dindings.</i>
European	...	14	—	—
Eurasian	...	36	2	—
Chinese	...	3,057	1,036	70
Malay	...	1,198	1,819	133
Dravidian	...	781	887	96
Other Indian	...	34	11	—
Others and Unknown	...	46	67	1

The Infantile Mortality (including children born elsewhere) was:—

		<i>Penang Island.</i>	<i>Province Wellesley.</i>	<i>Dindings.</i>
European	...	—	—	—
Eurasian	...	6	1	—
Chinese	...	545	155	7
Malay	...	256	339	28
Dravidian	...	145	132	23
Other Indian	...	5	2	—
Others and Unknown	...	5	9	—

The mortality of children under three months was:—

Penang Island	...	...	...	592
Province Wellesley	...	...	...	483
Dindings	...	...	...	46

Birth and Death-rates for the last five years:—

*Penang Island.*—

<i>Penang Island.</i>		<i>Birth-rate.</i>	<i>Death-rate.</i>	<i>Infantile Mortality.</i>
1920	...	29.55	35.30	228.86
1921	...	32.00	31.58	179.47
1922	...	31.48	32.11	173.07
1923	...	32.74	30.72	160.87
1924	...	33.82	30.32	167.24

*Province Wellesley.*—

1920	...	30.77	27.52	155.57
1921	...	35.48	28.61	144.25
1922	...	34.74	32.58	154.64
1923	...	30.92	29.97	158.46
1924	...	33.64	29.12	144.51

*Dindings.*—

1920	...	27.14	34.77	228.17
1921	...	27.92	30.69	186.19
1922	...	28.06	25.10	142.05
1923	...	29.06	21.83	111.40
1924	...	28.42	21.10	143.56

*Zymotic Diseases.—*

The number of deaths from Influenza in Penang Island was 15 as compared with 28 in 1923, 33 in 1922 and 48 in 1921.

*Plague.—*

There was one fatal case of Plague in Penang Island.

*Cholera.—*

There was one fatal case of Cholera in Penang Island.

*Small-pox.—*

There were five cases with 2 deaths in Penang Island and 2 cases and no death in Province Wellesley.

*Cerebro-Spinal Fever.—*

There was one fatal case in Penang Island, and 2 cases with one death in Province Wellesley.

*Vaccinations.—*

Seven thousand seven hundred and thirty vaccinations were performed by Government Vaccinators in Penang (Rural), 4,452 in Province Wellesley and 458 in the Dindings and 2,535 in Georgetown by the Municipal Vaccinators.

The average death-rate per annum from malaria in quinquennial periods has been:—

1901—1905	...	...	...	244 deaths.
1906—1910	...	...	...	843 deaths.
1911—1915	...	...	...	590 deaths.
1916—1920	...	...	...	716 deaths.
1921—1924	...	...	...	275 deaths (4 years.)

*Hospitals.—*

The number of in-patients treated and deaths in all hospitals in Penang Island and the hospital at the Quarantine Station, Pulau Jerejak, for the past five years is:—

<i>Years.</i>				<i>No. of patients. No. of deaths.</i>	
1920	...	...	...	11,385	1,168
1921	...	...	...	11,103	1,146
1922	...	...	...	11,260	991
1923	...	...	...	13,648	1,109
1924	...	...	...	11,950	1,171

## GENERAL HOSPITAL, PENANG.

The numbers treated in the General Hospital during the past five years were:—

Years.	1st and 2nd Class wards i.e. Europeans and higher class Asiatics.				3rd Class wards Asiatics.		
		Deaths.	Percentage,			Deaths,	Percentage.
—	—	—	—	—	—	—	—
1920	...	485	36	7·42	2,901	254	8·75
1921	...	398	21	5·27	2,826	220	7·78
1922	...	428	25	5·84	2,418	176	7·27
1923	...	426	14	3·28	2,642	281	10·6
1924	...	473	34	7·18	2,959	233	7·87

The number of Police admitted during the year was 145 as compared with 183 in 1923 and 240 in 1922.

The number of free patients treated in the wards of General Hospital was 1,318 compared with 1,149 the previous year; the majority of these cases were "Police Cases".

Two hundred and seventeen children were admitted and treated free.

The number of persons certified as of unsound mind and transferred to Singapore Lunatic Asylum was 93, comprising 82 males and 11 females, compared with 80 males and 3 females last year.

*Surgery.*—Two hundred and fifty-eight Major operations and 124 Minor operations were done during the year:—

#### KING EDWARD THE VII MATERNITY HOSPITAL.

Particulars.	European.	Eurasian.	Chinese.	Malay.	Siamese.	Indian.	Japanese.	Ceylonese.	Javanese.	Jew.	Burmese.	American.	Sikhs.	Total.
No. of patients admitted ...	48	21	427	3	1	211	1	2	5	..	2	1	16	738
„ of babies delivered ...	40	21	397	2	1	165	1	2	3	...	2	1	16	651
„ of still-born cases ...	1	3	32	...	...	19	...	...	...	...	...	...	...	55
„ of deaths ...	...	...	16	1	...	8	...	...	2	...	...	...	1	28
„ of abortion cases ...	1	...	2	...	...	1	...	...	...	...	...	...	..	4
„ admitted and left before confinement ...	..	...	33	1	...	44	..	...	1	...	...	...	...	79
„ admitted for curetting ...	7	...	...	...	...	...	...	...	..	...	..	...	...	7
„ of babies admitted ...	...	...	76	...	..	8	...	...	...	..	...	...	1	85
„ of babies admitted and died ...	...	...	40	...	...	3	...	...	...	...	...	...	1	44
„ of patients for examination ...	1	10	300	...	...	180	1	...	...	...	...	...	1	493

Out-door attendances numbered 241. The Chief diseases treated were fever, gastric or digestive trouble and bronchitis.

Nineteen midwives were trained during the year, their nationalities being:—

European	...	...	...	...	...	3
Chinese	...	...	...	...	...	9
Malay	...	...	...	...	...	2
Tamil	...	...	...	...	...	3

Nineteen midwife certificates were issued during the year:—

Class A	...	...	...	...	...	3
Class B	...	...	...	...	...	14
Class C	...	...	...	...	...	2

*Staff.*—

Miss MACDONALD the matron returned from long leave on 3rd January, 1924.

Sister HILL returned from long leave in July.

## DISTRICT HOSPITAL, PENANG.

REPORT BY J. C. TULL, M.D., C.M., M.R.C.P., *Government Pathologist, Penang.*

1. There remained in hospital on December 31st, 1923, 334 patients and 4,756 were admitted in 1924, making a total of 5,090 for the year, as compared with 6,022 in 1922 and 5,371 in 1923.

2. The number of deaths during the year was 600, giving a death-rate of 11·7 per cent as compared with 7·92 per cent in 1922 and 10·33 per cent in 1923.

3. The principal diseases treated were:—

	No. of cases.	Deaths.	Percentage.
Ankylostomiasis ...	849	1	·12%
Malaria—Subtertian ...	451	26	5·7 %
Malaria—Benign Tertian ...	234	3	1·3 %
Malaria—Quartan ...	13	—	— %
Fever Unclassified ...	138	4	·3 %
Syphilis ...	769	28	3·6 %
Pulmonary Tuberculosis ...	368	189	48·6 %
Dysentery—Bacillary ...	131	60	45·8 %
Dysentery—Amœbic ...	99	12	12·1 %
Lobar Pneumonia ...	38	21	55·2 %

4. The death-rate for pulmonary tuberculosis continues appallingly high, but is explained by the fact that tuberculous patients seek admission only when incapacitated from work and when the disease is far advanced.

5. The majority of the cases of bacillary dysentery are due to infection with Flexner's bacillus.

6. A special ward was set apart for Mohammedan patients.

7. The average daily number of patients was 344·02, as compared with 298·28 in 1922 and 351·1 in 1923.

8. Six hundred and six minor operations were performed during the year, as compared with 534 in 1922 and 639 in 1923; the major surgery was done in the General Hospital.

9. The general health of the staff has been good on the whole. Two junior dressers were found to have pulmonary tuberculosis, and one of them, SUNDRA RAJ, succumbed to his disease. He was a very promising young man, and had done excellent work in this hospital.

10. *Staff.*—Dr. A. N. KINGSBURY acted in charge of the hospital up to April 14th, 1924 when Dr. J. C. TULL resumed charge.

11. Electric light was supplied to the whole hospital in November: it greatly facilitates the care of the patients at night.

## BALIK PULAU HOSPITAL.

REPORT BY W. A. TAYLOR, M.B., Ch.B., *Chief Medical Officer, Penang.*

1. *Admission.*—Three hundred and three patients were admitted during the year, 9 patients remained over from preceding year.

2. The average daily sick was 17·41 as compared with 14·93 in 1923.

## 3. The principal diseases treated were:—

Ulcer	...	...	...	...	87
Ankylostomiasis	...	...	...	...	65
Ascariasis	...	...	...	...	28
Malaria B. T.	...	...	...	...	16
Syphilis	...	...	...	...	15

4. There were 15 deaths during the year and the percentage of deaths to total treated was 4·80 as compared with 8·24 in 1923.

*Schools.*—There are 26 Vernacular Boy's and Girl's Schools, 3 Chinese and one English School in the Rural Areas.

All the vernacular schools were visited: children requiring treatment were treated and the schools supplied with quinine. 1,835 school children were treated. Of these 734 children attended Balik Pulau and Bayan Lepas Dispensaries and the remaining 1,101 children were treated at their respective schools. The most prevalent diseases were malaria, ankylostomiasis and round-worm infestation.

## LUMUT HOSPITAL (DINDINGS).

REPORT BY P. MEHTA, L.M.S., *Assistant Medical Officer.*

1. *Work done.*—There were 499 admissions during the year, which with 11 remaining from the previous year, made a total of 510 compared with 508 of the previous year.

The average number of patients were 16·11 as compared with 16·1 of the previous year.

The principal diseases treated were:—

				Cases.	Deaths.
Dysentery, Amœbic	...	...	...	12	1
Influenza	...	...	...	18	—
Malaria	...	...	...	146	9
Pneumonia, Lobar	...	...	...	10	3
Broncho-pneumonia	...	...	...	8	1
Venereal Diseases	...	...	...	38	2
Phthisis	...	...	...	9	1
Ankylostomiasis	...	...	...	29	1
Nephritis	...	...	...	10	4

Blood films of all fever cases were taken and stools of all cases were examined. 344 travenous injections of quinine, 76 intravenous injections of N. A. B., and 32 intravenous injections of Iodine were given.

2. *Deaths.*—There were 28 deaths during the year, of these 6 died within 24 hours of admission. Percentage of deaths to total treated was 5·4. Percentage excluding those dying within 24 hours of admission was 4·3.

3. *Infectious Diseases.*—There were 3 cases of Small-pox during the year with no deaths.

## III.—PROVINCE WELLESLEY HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P.

I. Vital statistics for entire province are as follows:—

<i>Year.</i>		<i>Population.</i>	<i>Births.</i>	<i>Deaths.</i>	<i>Brith-rate.</i>	<i>Death-rate.</i>
1919	...	141,115	4,361	3,533	30·89	25·03
1920	...	142,710	4,391	3,928	30·76	27·57
1921	...	130,335	4,624	3,730	35·47	28·61
1922	...	130,580	4,533	4,251	34·71	32·55
1923	...	131,060	4,039	3,914	30·89	29·92
1924	...	131,241	4,415	3,822	33·64	29·12

It is probable that the actual population exceeds the estimate.

Infantile mortality per mille:—

1921	...	...	...	...	...	144·25
1922	...	...	...	...	...	150·64
1923	...	...	...	...	...	158·46
1924	...	...	...	...	...	144·51

3. *Revenue*.—This amounted to \$2,838.71 as compared with \$1,779.58 in the previous year:—

		<i>1924.</i>	<i>1923.</i>
Butterworth	...	\$1,255.12	\$ 709.69
Bukit Mertajam	...	\$1,583.59	\$1,069.89

4. *Hospital Statistics*.—

(A) *General*.—The total number of in-patients treated in the two Government Hospitals was 3,061 against 2,539 in 1923. Of this number 386 were estate coolies. Thus 12·6 per cent of our hospital in-patients come from Estates. The total number of deaths in the two hospitals was 224 giving a death-rate of 7·31 per cent against 7·39 per cent in 1923.

*Admissions. Death-rate %.*(B) *Prevalent diseases*.—

Malaria—Benign tertian	...	243	·82
Malaria—Sub-tertian	...	191	11·00
Malaria—Quartan	...	4	—
Dysentery—Amœbic	...	75	14·67
Dysentery—Bacillary	...	19	52·63
Phthisis	...	89	52·8
Venereal Diseases	...	311	1·6
Ankylostomiasis	...	229	9·6

## (C) Statistics for Out-door Dispensaries :—

			1924.	
			—	
			No. of patients.	No. of attendances.
<i>Out-door Dispensaries.</i>				
Butterworth	...	...	2,889	6,570
Bukit Mertajam	...	...	4,611	6,748
Penaga	..	...	1,358	1,788
Total			8,858	15,106

			1923.	
			—	
			No. of patients.	No. of attendances.
Butterworth	...	...	2,086	2,995
Bukit Mertajam	...	...	3,558	6,118
Penaga	...	...	1,068	1,536
Total			6,712	10,649

## (D) Zymotic Diseases :—

			1923.	1924.	Deaths.
Chicken-pox	...	...	7	10	—
Cerebro-Spinal Fever	...	...	—	2	1
Typhoid	...	...	3	1	1
Small-pox	...	...	9	1	—
Measles	...	...	—	5	—

The only disease which occurred in epidemic form was measles and this only to the extent of five cases, on Malakoff Estate.

The single case of small-pox was a policeman who contracted the disease in Penang, and returned to his home at Sungei Sembilan in the Central Province. He was isolated in his house and re-vaccination carried out in the neighbourhood.

The two sporadic cases of Cerebro-Spinal Fever which occurred in November and December were in no way connected. The first was a rickshaw puller who showed signs of disease at Bukit Mertajam fifteen days after his arrival from Rangoon.

The second was a Tamil coolie who arrived in the Colony by s.s. *Teesta* December 8th. He got ill two days after his arrival on Golden Grove Estate.

In both cases isolation of contacts was secured and prophylactic measures carried out in form of formalin spray and Pot. Permanganate Gargle twice daily.

The one case of Typhoid was admitted to Bukit Mertajam Hospital a few days after arrival at Bukit Mertajam from Singora, Siam.

5. *Estate Hospital Statistics.*—

Name of Estate Hospital.	Total Cases.	Malaria.	Diarrhœa and Dysentery.	Ankylos-tomiasis.	Pyrexia.	Ulcer.	Deaths from all Causes.	Average monthly labour force.
Malakoff ...	283	8	30	7	...	15	7	679
Bertam ...	612	28	54	32	89	16	12	1,458
Prye ...	20	2	...	1	...	1	3	755
Total ...	915	38	84	40	89	32	22	2,892

6. *Treatment of Yaws.*—This year less difficulty was experienced in inducing the Malays to accept treatment and it was possible to conduct the out-door work on a more systematic basis.

Twenty treatment centres, in conveniently situated vernacular schools, were chosen in each district and visits were made once a week. Two or in some cases three visits were made to each centre before proceeding to the next.

The numbers of injections given during the year were as follows:—

			1924.	1923.
Total number of cases	...	...	1,888	1,222
Total No. of injections	...	...	2,088	1,342

Classifications:—

Secondary	...	...	...	1,691
Tertiary	...	...	...	70
Puru Bubok	...	...	...	127

Race:—

Malay—Male	...	...	...	1,502
Malay—Female	...	...	...	326
Tamil—Male	...	...	...	24
Tamil—Female	...	...	...	11
Chinese—Male	...	...	...	23
Chinese—Female	...	...	...	2

7. *Routine Treatment of School Children for intestinal worms.*

This was commenced in November. All the children in nine vernacular schools were treated—832 children in all.

As this treatment has to be carried out during school inspection of children, it has been made as simple as possible.

The mixture consists of:—

Recipe—

Carbon Tetrachloride	...	...	...	min. V
Oil of Chenopodium	...	...	...	min. ii
Sugar Water	...	...	...	dram. i

The vaccinating dresser who assists at school inspection makes a short speech about the evils of worms. The children then file past and those in standard 4 and 3 (over 8 years of age) receive 2 drams, those in standards 2 and 1 (under 8 years) 1 dram (exceptions being made of feeble children in standards 4 and 3 and *vice versa*.)

School inspection is then proceeded with, after which the children file past again for mist. alba with which a sweet is given and school is finished for the day

Carried out in this way, the treatment does not add much to the time previously taken for school inspection. There is no opposition to the mixture made up with sugar water, and the dislike of the Mag. Sulph. is tempered by the bribe of a sweet.

Vomiting a few minutes to half an hour after the mixture occurred in five cases, but only in one case did any serious symptoms follow. On November 15th a child aged 8 years who had been given 2 drams of the mixture, followed in an hour by mist. alba  $\frac{1}{2}$  ounce passed many worms. Next day he commenced vomiting and this continued for 48 hours, almost incessantly towards the end. The child was brought into Butterworth Hospital 17th, in a collapsed condition and signs of intestinal obstruction. A tumour the size of a cricket ball was palpable in the abdomen, obviously caused by round worms, which could be felt moving. An Enema was given and sixteen round worms passed after which the child rapidly improved and returned home the same evening.

#### 8. *School inspection.*—

Thirty-eight schools were visited and 3,232 children examined:—

Spleen palpable	...	...	...	...	329
Teeth defective (more than 3)	...	...	...	...	222
Yaws	...	...	...	...	96
Enlarged tonsils	...	...	...	...	62
Anæmia	...	...	...	...	167

Treatment of minor ailments was carried out by vaccinating dressers.

#### 9. *Anti-malarial work.*—

Four areas were treated:—

- (a) Bukit Toh, Alang Estate.
- (b) Penaga Wireless Station.
- (c) Village Limits, Bukit Mertajam.
- (d) Village Limits, Butterworth.

(a) Bukit Toh Alang Estate: Malaria was unduly prevalent on this estate and in May a mosquito survey was made by Mr. RICHARDS.

The recommendations of Senior Health Officer, Penang, were carried out by the Manager, with favourable results. The number of cases of malaria admitted to Bukit Mertajam Hospital from this estate are as follows:—

July—December, 1923	...	16 cases (also acting Manager treated on estate).
January—June, 1924	...	6 cases.
July	...	2 cases.
August	...	1 case.
September—December	...	Nil.

(b) Penaga Wireless Station: Has always been troublesome and most of the staff there got malaria. Improvement of the site had often been considered but shelved owing to difficulty of problem or apparent impracticability of the recommendations. The site is low lying and surrounded by rice fields and swamps. In August a survey was made by Mr. AMPALACANA, the Mosquito Inspector, and the most offending area was found to be the overgrown swamps on the northern boundary. This has been dealt with by clearing and filling for 200 yards (not quite completed by end of year) the work being done by P. W. D. and paid for from Anti-mosquito Vote.

(c) Bukit Mertajam: A survey of Bukit Mertajam village limits confirmed the findings of 1923, that the worst places were along the railway reserve. The work commenced by the Federated Malay States Railway authorities in 1923 was continued this year. More subsoil drains were put down and the level of certain swamp areas raised by filling. Oiling of cement inverts and other drains is done regularly. Later inspections by the Mosquito Inspector indicate considerable improvements. Other work in Bukit Mertajam has been confined to regular oiling as a temporary measure as the conditions in Butterworth called more urgently for improvement by permanent works.

(d) Butterworth. Here malaria has been fairly prevalent. 136 cases, resident in the village limits, were admitted to hospital during the year (B. T.—68, S. T.—66 and Quartan—3) and in addition several Europeans were seen by me, whose blood films showed parasites. The town is situated on a sandbank along the coast, with lowlying or swampy ground beyond, much of which is below sea level at high tide. Efficient drainage cannot be procured immediately and filling must be very extensive to be of use. An exhaustive mosquito survey by the Mosquito Inspector was of little if any help as it showed that anophelus breeding places were universal (though recognised bad carriers were rare) and pointed to no localities requiring attention more than others. A map, on which the residence of all cases diagnosed was plotted, was of little more value, as it showed a fairly even distribution according to population.

It was therefore decided that the only practicable course to follow was:—

- (1) To continue the regular oiling commenced at the end of last year, as a temporary measure.
- (2) To fill swamps gradually and systematically.

The obvious centre, round which filling should be done centrifugally was the locality occupied by the Government Offices and Hospital and the swamps were divided into four groups, with this object in view. (map I). Filling of area I (crown land) was commenced in May and finished in July. Area II was then proceeded with, the crown land being filled from Anti-mosquito Vote, the remainder by the various owners. It was hoped that the filling of the crown land here could be completed by the end of the year, but the work was interrupted by the floods of October 2nd. About 9,000 cubic yards of sand have been used for this work in Butterworth during the year.

10. *Rural Sanitation*.—In March a fourth Sanitary Inspector was engaged by the Rural Board. This was considered necessary, owing to the increasing growth and importance of Butterworth and Prai. Thus one Sanitary Inspector can devote his whole attention to this Area; one, resident at Kapala Batas, to the remainder of the Northern District, and one, resident at Bukit Mertajam to the remainder of the Central District. This year Mr. EMUANG was sent to Singapore to take the course of study for the Diploma of the Royal Sanitary Institute, and has obtained his diploma. The only Sanitary Inspector now employed by the Rural Board who has not followed this course, is Mr. BOYLE (Sanitary Inspector Bukit Mertajam) and he will be given the opportunity of doing this in 1925.

Rural Board: By notification No. 193 *Government Gazette* January 25th the Senior Health Officer, Penang, replaced the Medical Officer, Province Wellesley, on the Rural Board.

II. *Hospital Buildings*.—All buildings in Butterworth Hospital were overhauled, repaired where necessary and painted. The Old Operating Theatre was re-roofed and converted into a laboratory. In both hospitals the latrines were converted to the Tan Tock Seng pattern and bed board boilers were erected.

12. *Staff*.—Medical Officer, Province Wellesley, North and Central Dr. L. W. EVANS.

Assistant Surgeon, Butterworth Hospital K. VEERASINGAM.

Assistant Surgeon, Bukit Mertajam, Assistant Medical Officer, Mr. MEHTA proceeded to Lumut on January 15th and was relieved by Assistant Surgeon LAU PECK HIONG.

#### BUTTERWORTH HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P., *Medical Officer*.

1. *Buildings*.—All the buildings were thoroughly overhauled, repaired and painted.

The old operation theatre was re-roofed and fitted up as a Laboratory.

All the latrines were converted to Tan Tock Seng pattern.

A new bed board boiler was erected.

2. *Staff*.—Assistant Surgeon V. VEERASINGAM was in charge throughout the year.

3. *Work done*.—Fifty-eight patients remained in Hospital from previous year, which with 1,471 admissions during the year gives a total of 1,529 cases treated during the year as against 1,140 cases treated during the previous year.

The average daily number of sick 58.41. During the year there were 103 deaths of which 27 died within 48 hours of admission.

The percentage of deaths to total treated was 6.73 as compared to 6.14 for the previous year. Excluding those dying within 48 hours of admission the percentage was 4.97, exactly the same as the previous year.

Sixty-two patients remained in hospital at the end of the year.

*Diseases*.—The principal diseases treated and deaths:—

			Cases.	Deaths.
Malaria—Sub-tertian	...	...	148	14
Malaria—Benign Tertian	...	...	144	—
Malaria—Quartan	...	...	2	—
Ankylostomiasis	...	...	105	14
Syphilis	...	...	104	1
Dysentery —Amoebic	...	...	46	6
Dysentery—Bacillary	...	...	13	6
Dysentery—Mixed	...	...	1	1
Pneumonia	...	...	34	9
Pulmonary Tuberculosis	...	...	38	15
Diarrhoea	...	...	21	1
Gonorrhoea	...	...	51	—

*Microscopical Work*.—A systematic examination of the blood, urine and sputum of all cases admitted to the hospital was carried out.

The result of blood examinations were:—

Malaria—Sub-tertian	...	...	...	172
Malaria—Benign Tertian	...	...	...	191
Malaria—Quartan	...	...	...	6

The result of stools examination were:—

Total number of stools examined was 2,016.				
Anky. Ova	...	...	...	238
Round-worm Ova	...	...	...	246
Amoeba	...	...	...	58
Whip-worm Ova	...	...	...	183
Thread-worm Ova	...	...	...	22

*Operation.*—One hundred and eighty-four major and minor operations were performed during the year.

*Infectious Diseases.*—There were six cases of chicken-pox and five cases of measles in the District during the year.

*Medico-legal.*—Nineteen bodies were sent by the Police for Post-mortem examinations.

One hundred and seventy-nine police cases were treated during the year.

#### BUKIT MERTAJAM HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P., *Medical Officer.*

1. *Buildings—Constructions, alterations.*—During this year:—

(a) In the quarantine area, two sheds were built with concrete floor and attap wall and roofing.

(b) A bed-board boiler was erected.

(c) The male and female latrines of the hospital were converted to Tan Tock Seng Hospital pattern.

(d) Several minor repairs were effected.

2. *Staff.*—Assistant Medical Officer, Mr. H. MEHTA was in charge from 1st January to 15th February, 1924 and Assistant Surgeon LAU PECK HIONG from 16th February to end of the year.

3. *Work done.*—(a) In Hospital. Fifty patients remained at the end of 1923:—

Years.	Admitted.	Total treated.	Average daily.	No. of deaths.	Percentage of deaths to total treated.	Percentage of deaths to total treated excluding deaths within 24 hours.	Number died within 48 hours.
1924 ...	1,492	1,542	62.92	121	7.84	6.88	16
1923 ...	1,343	1,399	58.19	121	8.64	7.65	15

Principal diseases treated with number of deaths as compared with the preceding year:—

Diseases.	Number of cases.		Number of deaths.	
	1924.	1923.	1924.	1923.
Ankylostomiasis ...	124	126	8	22
Malaria ...	166	367	10	11
Dysentery ...	36	37	9	8
Enteric Fever ...	1	3	1	3
Gonorrhœa ...	24	19	—	—
Soft Chancre ...	28	17	—	—
Phthisis ...	44	51	32	20
Pneumonia ...	35	16	15	4
Syphilis ...	132	89	4	1
Ulcer ...	104	150	—	—

The stools, blood, urine, sputum of all cases were examined on admission, of which 148 specimens of stools showed presence of Ankylostome Ova, 623 of Ova Ascaris, 247 Ova Tricocephalus Dispar and 144 of blood showed presence of Malaria parasites. 115 specimens of blood were sent to Penang for Wasserman Reaction and 102 were found to be positive.

*Infectious Diseases.*—During 1924 there occurred one case small-pox four cases of chicken-pox and two cases of cerebro-spinal fever. There was one death from cerebro-spinal fever.

*Medico-legal.*—H. M. Coroner sent in 13 bodies for Post-mortem, and Police sent in 123 cases for examination and 19 for observation.

#### SUNGEI BAKAP HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P., *Medical Officer.*

1. *Government Hospital, Sungei Bakap.*—Grounds and buildings have been maintained in good condition. Minor alterations in the arrangement of the Wards and Dispensary have been effected. Repairs to drains, roofs, etc., and general colour washing were done. The rooms near the hospital gate, previously occupied by a water carrier, were repaired and improved and allotted to a junior dresser as quarters. The quarters previously occupied by the Veterinary Inspector were allotted to this Department on November 16th and have been occupied by a senior dresser. The Quarantine Camp has been kept in good condition.

2. *Staff.*—Dr. L. W. EVANS was in charge during January and February. Dr. J. PORTELLI took over on March 1st.

3. *Statistics.*—The number of patients remaining at the beginning of the year was 65. The number of admissions during the year was 1,292. These numbers make a total of 1,357 treated during the year as compared with 1,319 during 1923.

The highest number of patients in hospital was 90 on May 2nd and the lowest 43 on October 28th. The highest number of monthly admissions was 151 for the month of December.

The total number of deaths was 129 and the percentage of deaths to total treated was 9.50 per cent against 10.15 per cent in 1923. The number of deaths within 48 hours of admission was 20.

The average daily number of sick during the year was 68.55.

The number of patients remaining at the end of the year is 66.

The principal diseases treated were as follows:—

<i>Diseases.</i>	<i>Cases.</i>	<i>Deaths.</i>	<i>Death-rate.</i>
Ankylostomiasis ...	218	21	9.6%
Dysentery—Amœbic ...	12	4	33.3%
Dysentery—Bacillary ...	29	3	10.3%
Malaria ...	240	10	4.1%
Phthisis ...	24	19	79.1%
Venereal Disease ...	88	4	4.5%
Chronic Ulcers ...	75	—	—

4. The Police sent in 156 cases, 118 being injuries; of the latter only 60 were detained in hospital. 7 lunatics and 3 lepers were certified during the year.

Post-mortem examination was held on 24 bodies sent in by the Coroner. In addition 6 post-mortems were carried out for confirmation or elucidation of diagnosis.

The number of police admitted was 33 and 80 were treated as out-patients.

5. The following laboratory examinations were carried out:—

Stools	...	...	...	...	1,390
Blood films	...	...	...	...	1,115
Sputum	...	...	...	...	109
Urine (chemical and microsc.)	...	...	...	...	109
Urethral Smears	...	...	...	...	39
Smears for lepra bacillus	...	...	...	...	25
Cerebro-spinal fluid (microscopical)	...	...	...	...	1

*Public Health, Estates, Schools.*—Zymotic diseases treated at the quarantine camp during the year were as follows:—

<i>Diseases.</i>	<i>Cases.</i>	<i>Deaths.</i>
—	—	—
Chicken-pox	8	—
Small-pox	1	—

The small-pox case occurred in the Public Works Department's coolie lines outside Nibong Tebal.

*Anti-malarial Work.*—A mosquito survey round Sungei Bakap has been carried out by Mr. AMPALAVANAR acting on instructions by Dr. F. R. SAYERS. This survey has resulted in finding several places where Anophelines are breeding. Various types have been found, mostly A. Vagus, A. Barbirostris, A. Hyrcanus. Larvæ of A. Maculatus and A. Aconitus have been encountered in several localities.

Several pits, drains, etc. have been dealt with permanently and regular oiling of breeding places is now taking place in Sungei Bakap, Simpang Ampat and Bukit Tambun.

All Police Stations and adjoining barracks have been regularly inspected and their sanitary condition and the health of their occupants have been satisfactory.

The water in Bukit Panchor Reservoir was treated with Copper Sulphate with a view to killing the Algoid growths "which were causing a reddish turbidity and an unpleasant smell in the water". The result of the treatment was elimination of the smell though the appearance of the water was not greatly affected.

2. Each Estate was visited twice during the year. The recommendations given in the first visit were in the majority of cases carried out satisfactorily. One large estate (Simpang) was obliged to employ a competent dresser (orders issued by Immigration Authorities). Forms D 261 and D 262 (estate health monthly returns) were introduced in April and have since been returned regularly by all estates.

The following table gives figures concerning the treatment of estate coolies in Sungei Bakap Hospital:—

<i>Estate.</i>	<i>Total cases.</i>	<i>Surgical.</i>	<i>Diarrhœa and dysentery.</i>	<i>Malaria.</i>	<i>Ankylostomiasis.</i>	<i>Death.</i>
Simpah ...	70	10	4	9	28	8
Val Dor ...	12	6	—	2	3	1
Bakap ...	38	6	6	10	10	6
Sungei Kechil	13	7	1	1	1	4
Lee Seng ...	9	1	—	2	3	8
Simpang ...	46	7	4	7	11	6
Sungei Duri ...	9	1	1	1	4	1
Hardouin ...	3	—	—	1	1	1
Gin Hong ...	15	3	—	6	4	—
Took Moh ...	2	1	—	1	—	—
Tassek Ayer Puteh ...	4	1	—	—	2	2
Batu Kawan	6	3	—	—	1	1
Kampong Lima	4	—	—	1	—	1
I. M. Ji Kongsii	11	—	—	6	2	2
Ji Kongsii ...	1	—	—	—	1	—
Dorset ...	2	—	—	—	1	—
Tan Sin Ho	1	—	—	—	1	—
Tek Swee ...	2	—	1	—	1	—

3. All the schools in the District (with the exception of the girls' school) 13 in number, were inspected. The total number of pupils examined was 918. Average spleen rate was 17·5, the highest being 41·1 at Permatang To Mahat vernacular school and the lowest 7·1 at the Anglo-Chinese School, Nibong Tebal.

Each vernacular school has in addition been visited every month by a dresser and treatment given to children who require it.

The Revenue for the year paid into Sub-treasury, Nibong Tebal was \$1,642.13 compared with \$1,597.22 in 1923.

#### IV.—MALACCA.

REPORT BY W. M. CHAMBERS, M.D., *Acting Chief Medical Officer, Malacca.*

1. *Staff.*—The following officers acted as Chief Medical Officer during the year.

Dr. H. W. FURNIVALL from 1st January, 1924, till 19th February, 1924.

Dr. J. I. BAEZA from 22nd February, 1924, till 14th March, 1924.

Dr. W. M. CHAMBERS from 15th March, till end of the year.

2. *Vital Statistics.*—(a) The following table gives the estimated population with Birth and Death-rates for the years 1922, 1923 and 1924:—

<i>Year.</i>	<i>Estimated Population.</i>	<i>Births.</i>	<i>Deaths.</i>	<i>Birth ratio per mille.</i>	<i>Death ratio per mille.</i>	<i>Infantile death ratio per mille.</i>
1922 ...	157,240	4,992	4,128	31·75	26·25	225·96
1923 ...	160,836	5,462	4,341	33·95	26·98	258·70
1924 ...	170,294	5,834	4,299	34·26	25·24	253·34

(b) The following table gives the Birth and Death-rates of the various Nationalities for 1924:—

Nationality.	Estimated Population 1924.	Births.	Deaths.	Birth ratio per mille.	Death ratio per mille.
Europeans ...	513	4	—	7·80	—
Eurasians ...	1,832	90	42	49·13	22·93
Chinese ...	49,946	1,581	1,292	31·65	25·87
Malays ...	88,989	3,597	2,406	40·42	27·04
Indians ...	28,778	445	505	15·46	17·55
Others ...	236	117	53	495·76	224·58
Unknown ...	—	—	1	—	—

*Infantile Mortality.*—With a view to decreasing the Infantile Mortality rate one Chinese woman and three Malay women were trained as Midwives in Singapore during the year. Provision has been made for training eight women in 1925. Arrangements were made during the year for the training of Lines Ayahs of Estates, to fit them to attend pregnant women and infants.

The Ayahs are to be trained at Durian Daun Hospital.

4. *Treatment of Malays.*—With a view to reaching the Malays a travelling motor Dispensary was put into operation in March and quickly proved to be very popular amongst the Kampong Malays. A separate tour of the Settlement was performed every week and routes were arranged and altered in consultation with the Collector of Land Revenue and District Officers who rendered valuable help.

There were 11,659 attendances at the travelling Dispensary. 2,950 cases of Yaws were treated with intravenous N. A. B. and the disease is rapidly becoming less common.

The forms of Yaws most frequently encountered were “Kedal” and “Bubol”. A satisfactory feature has been the large number of Malay women who have applied for treatment.

5. *Treatment of Venereal Disease.*—A Venereal Disease Clinic was opened in January; there were 2,249 attendances during the year. Propaganda has been carried out with a view to inducing patients to attend, persuading them to continue treatment till cured, and emphasizing the dangers of spreading the disease. Prostitutes have been encouraged to attend the Clinic voluntarily on special days reserved for them; the response has been fairly satisfactory.

6. *Malacca Agricultural Medical Board.*—The Board functioned efficiently during the year and good service was rendered to the Estates by the Board’s Medical Officers. The staff of four Europeans and two Chinese Medical Officer was kept at full strength during the year.

Close and friendly co-operation was maintained between the Board and the Medical Department and frequent consultations took place between the Medical Officers and the Acting Chief Medical Officers and Health Officer for the betterment of Health Conditions on the Estates.

7. *Training of Estate Dressers.*—In conjunction with the Malacca Agricultural Medical Board a course of instruction for Estate Dressers was given by the staff at Durian Daun Hospital which was attended by 34 Estate Dressers.

Twenty-seven Estate Dressers entered for an examination held at Durian Daun Hospital in December of whom 19 passed and were granted certificates.

## DURIAN DAUN HOSPITAL.

REPORT BY A. C. DUTTA, L.M.S., *Deputy Medical Officer.*1. *Work done:—*

Remained on 31st December, 1923	...	...	237
Admitted during the year	...	...	3,572
Discharged	...	...	3,166
Transferred	...	...	36
Absconded	...	...	51
Died	...	...	328
Remaining on 31st December, 1924	...	...	228

The daily average number of sick was 253·80.

The number of deaths within 48 hours of admission 89.

The percentage of deaths to total treated 8·61.

The percentage excluding those dying within 48 hours of admission 6·42

The number of European patients admitted in the 1st Class Wards was 74 males and 41 females. There was no death.

There were nine bookings for the European Maternity Ward during the year.

The principal diseases treated and their mortalities were as follows:—

Ankylostomiasis :	total cases treated	119	with deaths	8
Beri-beri	234	22		
Broncho-pneumonia	19	10		
Chicken-pox	10	Nil.		
Diarrhoea	20	Nil.		
Dysentery	145	44		
Gonorrhoea	55	Nil.		
Influenza	37	Nil.		
Leprosy	15	Nil.		
Malaria	653	39		
New Growth Malignant	11	6		
Pneumonia-lobar	61	15		
Soft Chancre	54	Nil.		
Syphilis	216	2		
Tetanus	4	1		
Tuberculosis	156	62		
Ulcers	330	Nil.		
Wounds	270	12		

2. *Surgery.*—There were 6,031 surgical operations performed during the year, of which 66 were Major and 5,965 Minor Operations. Deaths numbered five.

3. *Medico Legal:—*

(a) Sixty-six dead bodies were sent for post-mortem examination by the Coroner; of the deaths 18 were found to be due to natural causes, 8 to suicide, 23 to accident, and 17 to homicide.

(b) The Police brought in 302 cases for examination and treatment.

(c) Forty-three persons were brought in by the Police for observation of mental condition and 15 persons for examination for leprosy.

## QUARANTINE CAMP.

Total number of cases admitted for treatment 27.

Total number of cases admitted for isolation 3.

The diseases treated were as follows:—

Chicken-pox	...	...	10 cases with no death.
Erysipelas	...	...	5 „ „ „
Measles	...	...	6 „ „ „
Mumps	...	...	6 „ „ „

## JASIN HOSPITAL.

REPORT BY H. R. SARAVANAMUTHU, L.M.S., *Assistant Surgeon, Jasin.*

*The Year's work:—*

Remaining on 31st December, 1923	...	...	44
Total number of admissions during 1924	...	...	888
„ „ „ cases treated	...	...	932
„ „ „ discharges	...	...	782
„ „ „ transfers	...	...	2
„ „ „ absconders	...	...	11
„ „ „ deaths	...	...	83
Remaining on 31st December, 1924	...	...	54

The daily average number of sick was 53.13.

The percentage of death to total cases treated was 8.90.

The number of deaths within 48 hours of admission was 22.

The percentage of death to total cases treated excluding those dying within 48 hours of admission was 6.54.

*The chief diseases treated were:—*

Ankylostomiasis	...	...	31 with 5 deaths.
Beri-beri	...	...	34 „ 2 „
Amœbic Dysentery	...	...	32 „ 4 „
Gonorrhœa	...	...	21 „ Nil. „
Influenza	...	...	30 „ 7 „
Malaria S. T.	...	...	31 „ 5 „
Malaria B. T.	...	...	49 „ Nil. „
Malaria Quartan	...	...	10 „ 1 „
Malaria Chronic	...	...	32 „ Nil. „
Malaria Unclassified	...	...	112 „ 2 „
Malarial Neuritis	...	...	7 „ Nil. „
Nephritis	...	...	21 „ 8 „
Phthisis	...	...	23 „ 13 „
Broncho-Pneumonia	...	...	19 „ 12 „
Lobar-Pneumonia	...	...	16 „ 12 „
Syphilis	...	...	74 „ 2 „
Ulcer	...	...	80 „ Nil. „

The total number of Estate coolies treated was	...	136
„ „ „ Government Servants was	...	125
„ „ „ Paying cases	...	7
„ „ „ Free cases	...	664

*Surgical work:—*

Total number of Minor Operations was ...	54
„ „ „ Neo-salvarsan Injections ...	131

*Medico-legal work:—*

Total number of bodies sent by Police for Post-mortem	8
„ „ „ Police cases treated ...	56
Percentage of Ankylostome ova found in stools examined ...	25.0
Percentage of Ascaris ova found in stools examined	30.0

## V.—LABUAN HOSPITAL.

REPORT BY T. C. A. CLEVERTON, M.R.C.S., L.R.C.P.

*Labuan Annual Medical Report for the year ending 31st December, 1924.**Financial—*

					\$	c.
Revenue	...	...	...	...	1,398	50
Expenditure	...	...	...	...	17,411	59

*Public Health and Population:—*

Table showing estimated population, with the Birth and Death-rates for the years 1922 to 1924.

Year.	Estimated population.	Births.	Deaths.	Birth-rate.	Death-rate.
1922	... 5,922	211	201	35.62	33.94
1923	... 5,972	229	171	38.34	28.63
1924	... 5,746	225	197	39.15	34.28

The Birth-rate was higher during the 2nd quarter. The Death-rate was higher during the 1st quarter. Of the total number of deaths, Malaria accounted for 33, Phthisis 40, Debility and Age 39.

The mortality under one year of age was 49 (33 Malays, 13 Chinese, 1 Indian and 2 Other-nationalities) as against 52 in 1923.

The following table shows the Infantile mortality under one year of age for the past three years.

Year.	Deaths.	Proportion total Death-rate.	Infantile deaths under 1 year.
1922	... 62	31.34%	218.5 per thousand.
1923	... 52	30.40%	227.0 „ „
1924	... 49	24.87%	217.7 „ „

There were 7 still-births during the year as against 8 in 1923. The causes of deaths amongst infants under one year of age were registered as follows:— Malaria 11      Convulsions 35      and Inanition 3.

*Malaria:—*

One hundred and seventeen cases were admitted during the year as against 63 in 1923.

Two hundred and sixty-one cases were treated as Out-patients during the year as against 238 in 1923. Of the total number of deaths 33 were attributed to this disease and 25 in 1923. Even more of the admissions to Hospital for this disease than during last year came from Brunei and Sarawak. Only 4 cases of Quartan malaria were admitted to Hospital during the year, 2 came from Brunei and 2 from British North Borneo.

*Venereal Disease:—*

Twenty-seven cases were treated in Hospital as against 12 in 1923.

Fifteen cases were treated as Out-patients as against 6 in 1923.

*Pulmonary Tuberculosis:—*

Ten cases were treated in Hospital during the year as against 9 in 1923. Five of these cases died. Of the total number of deaths 40 were from this disease this year and 48 in 1923, showing a death-rate of 20.30 of the total deaths as against 28.07 in 1923. Most of these deaths occurred in persons of over 40 years.

*General European population:—*

There are 17 Europeans. The general health of these has been fair. No invalidings were necessitated during 1924; there were no Births or Deaths.

*Port Health Work.*—No Ships were quarantined during this year.

*Police Force:—*

	1923.	1924.
Total number of Asiatics ...	37	—
Number of admissions to Hospital ...	28	49
Number of Out-patients attendances ...	426	411
Number of admissions for Malaria ...	21	26
Number of Out-patients for Malaria ...	62	54

*Prisoners:—*

	1923.	1924.
Number of admissions to Hospital ...	8	23
Number of Out-patients ...	8	46
Number of admissions for Malaria ...	3	10

*Vaccination:—*

Two hundred and fifty children were Vaccinated during the year as against 223 in 1923. Of these 224 were successful 11 modified and 15 failed. Ages. 6 months and under 90. Seven months to 1 year 81, one year and above 79.

*Hospital:—*

The total number of admissions during the year was 268 as against 181 in 1923. There were 15 deaths, giving a percentage mortality to the total treated 5.33 as against 7.81 in 1923.

The chief diseases treated were Malaria 120 with 4 deaths, Pulmonary Tuberculosis 10 with 5 deaths, Diarrhoea 4 with one death, Cellulitis 6 with 1 death, and Syphilis 16 with no deaths.

Total number of cases treated in Hospital for the last 3 years according to Nationalities as follows:—

	1922.	1923.	1924.
Europeans ...	1	2	1
Chinese ...	59	75	97
Malays ...	71	68	90
Indians ...	34	19	20
Other-nationalities ...	14	28	73
Total ...	179	192	281

## OPERATIONS.

Nine operations were performed under Chloroform in addition a few incisions of abscess, etc., were done without anæsthetic. 232 intravenous injections of organic arsenical compounds were given chiefly for Syphilis and yaws.

## APPENDIX "E"

## Return of Diseases and Deaths in 1924, at Hospitals.

## (i)—SINGAPORE.

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
INFECTIVE DISEASES : —						
Beri Beri ... ..	116	506	108	622	93	
Bubo ... ..	5	381	...	386	25	
Cerebro-spinal Fever ... ..	...	32	7	32	1	
Chicken-pox ... ..	2	26	...	28	...	
Cholera ... ..	...	7	4	7	...	
Cyst ... ..	...	2	...	2	...	
Dengue Fever ... ..	...	9	...	9	...	
Diphtheria ... ..	...	5	...	5	...	
Dysentery Amœbic and Bacillary ... ..	18	560	209	578	30	
Enteric ... ..	5	83	36	88	7	
Erysipelas ... ..	...	7	...	7	...	
Gonorrhœa ... ..	38	342	...	380	12	
Influenza ... ..	5	133	...	138	...	
Leprosy ... ..	89	128	19	217	98	
Malaria—						
(a) Tertian ... ..	31	904	87	935	16	
(b) Quartan ... ..	1	96	3	97	5	
(c) Aestiva-autumnal ... ..	8	158	28	166	5	
(d) Chronic ... ..	12	454	43	466	28	
(e) Black water ... ..	...	3	2	3	...	
(f) Mixed ... ..	1	70	2	71	...	
(g) Unclassified ... ..	14	198	8	212	12	
(h) S. T. R. ... ..	...	19	1	19	...	
Measles ... ..	...	26	1	26	1	
Plague ... ..	...	7	...	7	...	
Pyrexia of uncertain origin ... ..	8	664	...	672	8	
Pneumoceal Meningitis ... ..	...	4	4	4	...	
Pyæmia ... ..	...	4	4	4	...	
Pneumonia ... ..	5	287	110	292	10	
Mumps ... ..	...	6	...	6	...	
Relapsing Fever ... ..	...	5	...	5	...	
Rheumatic Fever ... ..	2	13	...	15	2	
Rhumatism (subacute) ... ..	2	37	...	39	...	
Septicæmia ... ..	...	20	20	20	...	
Small-pox ... ..	...	20	4	20	...	
Sapræmia ... ..	...	20	20	20	...	
Syphilis—						
(a) Primary ... ..	24	239	...	263	6	
(b) Secondary ... ..	77	998	22	1,075	82	
(c) Tertiary ... ..	13	103	13	116	9	
(d) Inherited ... ..	1	3	1	4	...	
Toxæmia ... ..	...	5	5	5	...	
Tetanus ... ..	...	6	1	6	...	
Tuberculosis ... ..	77	914	456	991	86	
Carried forward ... ..	554	7,504	1,214	8,058	536	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	454	7,404	1,214	8,058	536	
<b>INFECTIVE DISEASES.—<i>Cntd.</i></b>						
Vaccine Rash ...	...	2	...	2	...	
Whooping Cough ...	...	2	...	2	...	
Yaws ...	...	7	...	7	...	
Other Diseases ...	...	9	...	9	...	
<b>GENERAL DISEASES :—</b>						
Anæmia ...	1	11	...	12	...	
Anæmia Splenic ...	...	4	...	4	...	
Diabetes ...	1	24	2	25	...	
Debility ...	2	21	4	23	...	
Exophthalmic Goitre ...	1	1	1	2	...	
Senility ...	3	4	...	7	3	
Gout ...	...	2	...	2	...	
Rickets ...	...	1	...	1	1	
Other Diseases ...	1	54	6	55	10	
<b>INTOXICATION :—</b>						
Alcoholism ...	...	27	...	27	...	
Morphinism ...	...	4	...	4	...	
Others ...	...	9	1	9	1	
<b>DISEASE OF NERVOUS SYSTEM :—</b>						
<i>Sub-section 1—</i>						
Abscess Brain ...	...	1	1	1	...	
Facial Paralysis ...	...	2	...	2	...	
Cephalalgia ...	...	37	...	37	...	
Cerebral Softening ...	...	6	6	6	...	
Cerebral Hæmorrhage ...	1	13	12	14	2	
Hemiplegia ...	21	37	1	58	15	
Meningitis ...	...	13	4	13	7	
Locomotor Ataxia ...	7	19	...	26	2	
Myelitis ...	2	5	1	7	...	
Cerebral Thrombosis ...	1	4	2	5	8	
Neuritis ...	7	74	1	81	...	
<i>Carried forward</i> ...	502	7,797	1,256	8,499	585	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	502	7,797	1,256	8,499	585	
NERVOUS SYSTEM.— <i>Contd.</i>						
<i>Sub-section.—Contd.</i>						
Cerebral Tumour ...	...	1	1	1	...	
Neuritis-Peripheral ...	...	10	...	10	...	
Sciatica ...	...	1	...	1	...	
Hæmorrhage Spinalcord	1	...	...	1	...	
Paraplegia-Spastic ...	13	21	...	34	12	
Other Diseases ...	1	9	3	10	2	
<i>Sub-section 2—</i>						
Epilepsy ...	...	15	...	15	...	
Hysteria ...	...	5	...	5	1	
Neurasthenia ...	1	...	...	1	1	
Neuralgia ...	...	13	...	13	...	
Paralysis ...	...	1	...	1	...	
Other Diseases ...	9	28	3	37	8	
<i>Sub-section 3—</i>						
Mental Diseases ...	...	1	...	1	...	
Dementia ...	155	72	46	227	173	
Delusional Insanity ...	22	50	1	72	23	
Idiocy Imbecility ...	33	12	7	45	38	
Mania ...	228	197	41	425	249	
Melancholia ...	64	68	13	132	91	
Puerperal Insanity ...	...	2	...	2	...	
Other Mental Disorders	12	27	3	39	19	
Not Insane ...	...	2	1	2	...	
LOCAL DISEASES.						
DISEASES OF THE EYE.—						
Disorganisation of Eye- ball ...	3	1	...	4	4	
Pterygium ...	...	2	...	2	..	
Cataract ...	9	8	2	17	8	
Corneal Opacity ...	35	19	1	54	20	
Conjunctivitis ...	14	177	...	191	10	
Blindness ...	22	24	...	46	34	
Iritis ...	4	13	...	17	8	
Gonorrhœal Ophthalmia	...	5	...	5	1	
Keratitis ...	...	43	...	43	4	
Optic Atrophy ...	3	6	2	9	4	
Optic Neuritis ...	1	...	...	1	...	
<i>Carried forward</i> ...	1,132	8,630	1,380	9,862	1,295	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,132	8,630	1,380	9,862	1,295	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Eye.—Con.</i>						
Hypopyon ...	...	2	...	2	...	
Ulceration-corneal ...	4	34	...	38	3	
Scleritis ...	...	1	...	1	...	
Trachoma ...	...	3	...	3	...	
Staphyloma ...	7	11	1	18	10	
Lencoma ...	...	7	...	7	3	
Other Diseases ...	11	53	...	64	11	
DISEASES OF THE NOSE ...	...	36	...	36	2	
Epistaxis ...	...	2	...	2	...	
DISEASES OF THE EAR:—						
Otitis Media ...	...	9	2	9	...	
Inflammation ...	...	8	...	8	1	
Otorrhœa ...	...	4	...	4	1	
Other Diseases ...	1	71	...	72	3	
CIRCULATORY SYSTEM:—						
Aortitis ...	1	37	35	38	...	
Aortic Incompetence ...	...	3	...	3	...	
Arterial Sclerosis ...	1	45	27	46	8	
Mitral Incompetence ...	...	14	1	14	2	
Aneurysm ...	...	14	7	14	1	
Aortic Endocarditis ...	...	17	17	17	...	
Endocarditis ...	...	21	16	21	...	
Endocartis c Mitral—						
Incompetence ...	2	3	1	5	...	
Myocarditis ...	...	11	9	11	...	
Myocarditis and Aortitis ...	...	2	2	2	...	
Pericarditis ...	...	2	...	2	...	
Acute Pericarditis ...	...	5	5	5	...	
Valvular Disease-Mitral...	1	15	4	16	1	
Valvular Disease Heart...	2	22	2	24	...	
Valvular Aortic ...	1	19	...	20	...	
Pneumococcal—						
Pericarditis ...	...	3	...	3	...	
Valvular Disease-Mitral and Aortic ...	...	9	1	9	...	
Other Diseases ...	...	34	12	34	2	
<i>Carried forward</i> ...	1,165	9,147	1,522	10,410	1,343	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,165	9,147	1,522	10,410	1,343	
LOCAL DISEASES.— <i>Contd.</i>						
RESPIRATORY SYSTEM:—						
Asthma ...	10	62	1	72	5	
Bronchitis ...	18	490	...	508	18	
Empyema ...	1	10	5	11	1	
Laryngitis ...	...	...	...	...	...	
Pharyngitis ...	...	...	...	...	...	
Pleurisy ...	1	56	2	57	...	
Gangrene lungs ...	...	3	3	3	...	
Ulcers of Larynx ...	...	...	...	...	...	
Other Diseases ...	...	72	5	72	3	
Broncho Pneumonia ...	2	133	56	135	3	
DISEASES OF THE DIGESTIVE SYSTEM:—						
Appendicitis ...	3	95	7	98	5	
Abscess Liver ...	...	11	5	11	...	
Ascites ...	1	3	1	4	1	
Abscess ...	...	6	...	6	...	
Cancrum Oris ...	1	3	3	4	...	
Caries of Teeth ...	1	21	...	22	...	
Catarrhal Jaundice ...	...	8	...	8	1	
Colitis ...	...	34	...	34	...	
Colic ...	...	54	...	54	...	
Constipation ...	...	103	...	103	...	
Cholangitis-Septic ...	...	8	7	8	...	
Cirrhosis ...	2	17	5	19	2	
Cholecystitis-Septic ...	...	14	6	14	1	
Dyspepsia ...	...	51	...	51	3	
Cholecystitis Acute Peritonitis ...	...	1	...	1	...	
Diarrhoea ...	6	191	...	197	...	
Dilatation of Stomach ...	1	1	...	2	...	
Enteritis ...	5	147	18	152	26	
Fistula in Ano ...	2	7	...	9	1	
Gastritis ...	5	151	...	156	4	
Gall Stones ...	...	2	2	2	...	
Hernia ...	8	80	3	88	3	
Granuloma Rectum ...	...	7	...	7	...	
Hæmorrhoids ...	4	81	...	85	2	
<i>Carried forward</i> ...	1,236	11,069	1,651	12,403	1,422	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924	REMARKS.
		Admissions	Deaths.			
<i>Brought forward</i> ...	1,236	11,069	1,651	12,403	1,422	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Digestive System.—Contd.</i>						
Hepatic Cirrhosis ...	8	102	44	110	6	
Hepatitis ...	1	7	1	8	...	
Hepatic Abscess ...	...	...	...	...	...	
Ichio Rectal Abscess ...	...	26	...	26	5	
Intestinal Obstruction ...	...	9	1	9	...	
Jaundice ...	...	11	...	11	...	
Pyorrhœa Alveolaries ...	...	31	1	31	4	
Pancreatitis ...	1	...	...	1	...	
Perihepatitis ...	...	1	...	1	...	
Peritonitis ...	...	24	21	24	...	
Prolapse of Rectum ...	...	1	...	1	...	
Stomatitis ...	3	10	...	13	1	
Sore Throat ...	...	4	...	4	...	
Sprue ...	...	3	1	3	...	
Suppurative Gland Neck	1	...	...	1	...	
Tonsilitis ...	1	80	...	81	5	
Ulcer Pyloric ...	...	4	1	4	...	
Ulceration Stomach ...	...	22	11	22	4	
Ulcer Duodinal ...	...	2	2	2	...	
Melioidosis ...	...	1	1	1	...	
Malignant Stricture Oesophagus ...	...	1	1	1	...	
Other Diseases ...	9	182	27	191	9	
DISEASES OF THE LYMPHATIC SYSTEM :—						
Inflammation L y m p h						
Gland ...	7	45	...	52	4	
Lymphangitis ...	...	5	...	5	...	
Rupture Spleen ...	...	1	1	1	...	
Splenitis ...	...	2	...	2	...	
Lymphatic Leucæmia ...	...	1	1	1	...	
Other Diseases ...	1	53	1	54	6	
DISEASES OF THE URINARY SYSTEM :—						
Bright's Disease ...	4	23	12	27	...	
Calculus ...	...	12	...	12	...	
Cystitis ...	3	30	3	33	3	
Chyluria ...	...	2	...	2	...	
<i>Carried forward</i> ...	1,275	11,764	1,781	13,137	1,469	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,275	11,764	1,781	13,137	1,469	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Urinary System.—Contd.</i>						
C h r : Parenchymatous Nephritis ...	1	62	38	63	2	
Extravasation of Urine ...	...	5	3	5	...	
Hæmaturia ...	...	8	1	8	...	
Nephritis-Acute ...	6	103	7	109	7	
Nephritis-Chronic ...	10	145	27	155	1	
Pyelitis ...	...	8	...	8	...	
Renal Colic ...	...	13	...	13	...	
Subacute Parenchymatous Nephritis ...	2	11	...	13	...	
Other Diseases ...	1	45	13	46	...	
DISEASES OF THE GENERATIVE ORGANS :—						
MALE ORGANS :—						
Phimosis ...	...	11	...	11	...	
Abscess Testicle ...	...	2	...	2	...	
Epididymitis ...	...	16	...	16	...	
Gleet ...	...	2	...	2	...	
Urethritis ...	2	43	...	45	1	
Hydrocele ...	6	48	...	54	5	
Stricture Urethra ...	1	34	...	35	...	
Inflammation Scrotum ...	1	4	...	5	...	
Soft Chancre ...	12	140	...	152	7	
Orchitis ...	...	31	...	31	...	
Prostatitis ...	1	3	...	4	...	
Rupture of Testicle ...	...	1	...	1	...	
Other Diseases ...	2	56	2	58	2	
Condyloma Anus ...	1	7	...	8	1	
<i>Female Organs—</i>						
Abortion ...	...	5	...	5	...	
Abscess Breast ...	...	4	...	4	...	
Displacement of Uterus ...	...	2	...	2	...	
Dysmenorrhœa ...	...	5	...	5	...	
Endometritis ...	...	1	...	1	...	
<i>Carried forward</i> ...	1,321	12,579	1,872	13,998	1,495	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,321	12,579	1,872	13,998	1,495	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Generative Organs.—Contd.</i>						
Leucorrhœa ...	...	2	...	2	...	
Metrorrhagia ...	...	4	...	4	...	
Mastigitis ...	...	3	...	3	...	
Ovarian Cyst ...	...	7	...	7	...	
Post Partum Hæmorrhage ...	...	19	1	19	...	
Fuerperal Septicæmia...	..	7	6	7	...	
Retained Placenta ...	...	2	1	2	...	
Retroversion Uterus ...	...	18	...	18	...	
Vaginitis ...	...	5	...	5	...	
Other Diseases ...	23	752	29	775	29	
DISEASES OF THE LOCOMOTION:—						
Ankylosis ...	2	5	...	7	4	
Arthritis ...	11	137	...	148	15	
Arthritis Gonorrhœal ...	...	95	...	95	6	
Bursitis ...	...	6	...	6	...	
Myalgia ...	...	17	...	17	...	
Periostitis ...	2	4	...	6	3	
Psoas Abscess ...	3	6	4	9	...	
Spondylitis ...	...	2	...	2	1	
Other Diseases ...	3	103	1	106	3	
DISEASES OF THE CONNECTIVE TISSUE:—						
Abscess ...	16	290	2	306	6	
Cellulitis ...	11	118	3	129	3	
Elephantiasis ...	1	9	...	10	1	
Gangrene-foot ...	...	1	...	1	...	
Sinus ...	...	23	...	23	...	
Other Diseases ...	1	13	...	14	1	
DISEASES OF THE SKIN:—						
Acne ...	...	1	...	1	...	
Eczema ...	4	00	...	04	4	
Boil ...	3	27	...	30	1	
<i>Carried forward</i> ...	1,401	14,345	1,919	15,844	1,572	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining. in Hospital at end of 1924.	REMARKS
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,401	14,345	1,919	15,844	1,572	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Skin.—Contd.</i>						
Carbuncle ...	2	24	1	26	...	
Dermatitis ...	1	28	...	29	1	
Herpes Zoster ...	...	10	...	10	...	
Psoriasis ...	...	6	...	6	...	
Pricklyheat ...	...	7	...	7	...	
Ringworm ...	...	7	...	7	...	
Scabies ...	3	137	...	140	3	
Sebaceous Cyst ...	1	2	...	3	...	
Tinea Cruris ...	...	1	...	1	...	
Ulcers ...	96	1,071	...	1,167	69	
Ulcers, Malignant ...	...	...	...	...	...	
Whitlow ...	3	14	...	17	...	
Other Diseases ...	1	78	...	79	4	
ASPHYXIA ...	...	7	7	7	...	
Fractures ...	9	95	10	104	13	
General Injury ...	1	137	18	138	3	
Burns ...	2	35	...	37	3	
Local injury ...	70	1,775	61	1,845	68	
Tumours and Cyst ...	4	61	6	65	2	
Malformation ...	4	57	28	61	6	
Shocks ...	...	6	6	6	...	
POISONS ...	1	27	7	28	1	
ANIMAL PARASITES:—						
Ascaris ...	...	115	...	115	1	
Ankylostomiasis ...	42	754	49	796	33	
Pilariasis ...	...	2	...	2	...	
Pilaria Medinensis ...	...	1	...	1	...	
Helminthiasis ...	...	1	...	1	...	
Rhinosporidium ...	...	3	...	3	...	
Schistosomiasis ...	...	5	5	5	...	
Strongyloides ...	...	1	...	1	...	
Taenia Solium ...	...	3	...	3	...	
Trichaniasis ...	...	8	...	8	...	
<i>Carried forward</i> ..	1,641	18,823	2,117	20,562	1,779	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE SINGAPORE HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,641	18,823	2,117	20,562	1,779	
LOCAL DISEASES.— <i>Contd.</i>						
MISCELLANEOUS :—						
No Diseases detected ...	3	133	...	136	...	
Observation ...	2	169	...	171	4	
Observation found Insane ...	...	131	...	131	...	
With Child ...	3	73	...	76	...	
Malingering ...	...	3	...	3	...	
COMPLICATIONS OF PREG- NANCY OF LABOUR AND OF THE PUERPERIUM :—						
Albuminuria ...	...	41	..	41	...	
Miscarriage ...	...	5	...	5	...	
Premature Labour ...	...	15	...	15	...	
Hydramnios ...	...	5	...	5	...	
Eclampsia ...	...	2	...	2	...	
Placenta Previa ...	...	7	...	7	...	
Accidental Hæmorrhage (Concealed) ...	...	1	I	1	...	
Accidental Hæmorrhage (revealed) ...	...	2	I	2	...	
Adherent Placenta ...	...	2	...	2	...	
Prolapse of Cord ...	...	4	...	4	...	
Anecephalic foetus ...	...	1	...	1	...	
Macerated foetus ...	...	26	...	26	...	
Still born Children ...	...	22	...	22	...	
Twins ...	...	4	...	4	...	
Transverse Presentations ...	...	5	...	5	...	
Face ...	...	5	...	5	...	
Breech ...	...	27	...	27	...	
Vertex ...	...	635	...	635	...	
Total ..	1,649	20,141	2,119	21,888	1,783	

## (ii)—PENANG.

## RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
INFECTIOUS DISEASES :—						
Blackwater Fever ...	...	1	...	1	...	
Beri-beri ...	6	32	9	38	4	
Cerebro Spinal Meningitis ...	...	3	1	3	...	
Chicken-pox ...	...	35	...	35	...	
Dysentery, unclassified ...	7	80	2	87	...	
„ Amoebic ...	4	100	18	104	6	
„ Bacillary ...	3	202	61	205	3	
„ Chronic ...	...	1	...	1	...	
Cholera ...	7	149	71	156	...	
Dengue ...	...	10	...	10	1	
Diphtheria ...	...	3	2	3	...	
Enteric Fever ...	1	7	1	8	1	
Erysipelas ...	...	5	1	5	...	
Elephantiasis ...	...	3	...	3	...	
Gangrene ...	1	8	4	9	1	
Glandular Fever ...	...	1	...	1	...	
Gonorrhœa ...	21	119	...	140	3	
Gonorrhœa, c other mani- festations ...	...	37	...	37	3	
Influenza ...	3	255	22	258	...	
Leprosy ...	38	42	1	80	38	
Leprosy, Anaesthetic ...	289	78	73	367	286	
Leprosy, Nodular ...	250	109	57	359	298	
Malaria, Unclassified ...	6	462	15	468	15	
Malaria, Benign Tertian... ...	7	318	7	325	10	
Malaria, Quartan ...	...	17	...	17	...	
Malaria, Mixed Tertian ...	17	587	23	604	13	
Malaria, Chronic ...	...	30	5	30	4	
Malaria, Cachexia ...	...	44	4	44	2	
Malaria, Cerebral ...	...	4	3	4	...	
Meningitis, Pneumococcal ...	...	1	1	1	...	
Meningitis, Tubercular ...	...	1	1	1	...	
Measles ...	...	39	2	39	...	
Mumps ...	...	12	...	12	...	
Pyrexia ...	1	37	...	38	...	
Plague ...	...	1	1	1	...	
Pneumonia ...	1	83	43	84	3	
Pyemia ...	...	3	...	3	...	
Rheumatic Fever ...	1	24	1	25	2	
Septicaemia ...	...	38	33	38	...	
Syphilis, Primary ...	14	168	...	182	17	
Syphilis, Secondary ...	17	397	9	414	22	
Syphilis, Tertiary ...	66	261	16	327	45	
Syphilis, Inherited ...	...	2	1	2	...	
Syphilis, Rheumatism ...	2	...	...	2	...	
Carried forward ..	762	3,809	488	4,571	777	

RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	762	3,809	488	4,571	777	
INFECTIVE DISEASES.— <i>Cntd.</i>						
Syphilis, Ulcers ...	...	5	...	5	...	
Chancre and Bubo ...	4	152	...	156	...	
Small-pox ...	...	1	...	1	...	
Tuberculosis ...	1	11	1	12	2	
Tetanus ...	...	8	5	8	...	
Other Diseases ...	...	21	...	21	1	
Yaws ...	...	7	...	7	...	
INTOXICATIONS :—						
Alcoholism ...	...	4	...	4	...	
Opium poisoning ...	...	10	2	10	...	
GENERAL DISEASES :—						
Anæmia ...	3	20	3	23	1	
Diabetes ...	...	4	2	4	...	
Debility ...	...	44	6	44	6	
Exophthalmic Goitre ...	...	1	...	1	...	
Other Diseases ...	...	3	...	3	1	
Senility ...	1	92	16	93	14	
DISEASES OF THE NERVOUS SYSTEM :—						
<i>Sub-section 1—</i>						
Meningitis ...	...	5	2	5	1	
Myelitis ...	...	1	...	1	...	
Neuritis ...	1	7	...	8	3	
<i>Sub-section 2—</i>						
Cerebral Hæmorrhage ...	...	8	8	8	...	
Epilepsy ...	...	6	1	6	...	
Hemiplegia ...	11	13	1	24	9	
Neuralgia ...	...	5	...	5	...	
Other Diseases ...	...	15	8	15	1	
Paralysis ...	1	10	...	11	1	
Faraplegia ...	7	11	...	18	10	
<i>Carried forward</i> ...	791	4,273	543	5,064	827	

RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated	Remaining in Hospital at end of 1924.	REMARKS
		Admissions.	Deaths.			
<i>Brought forward</i> ...	791	4,273	543	5,064	827	
DISEASES OF THE NERVOUS SYSTEM.— <i>Contd.</i>						
<i>Sub-section 3—</i>						
Delusional Insanity ...	5	99	104	104	5	
Dementia ...	...	1	...	1	...	
Melancholia ...	...	4	...	4	...	
DISEASES OF THE EYES:—						
Conjunctivitis ...	3	147	...	150	...	
Cataract ...	2	27	...	29	2	
Corneal Ulcer ...	4	27	...	31	4	
Corneal, Opacity ...	3	23	...	26	2	
Disorganised Eye ...	2	12	...	14	1	
Hypopyon ...	...	2	...	2	...	
Iritis ...	...	9	...	9	...	
Keratitis ...	2	16	...	18	2	
Optic Neuritis ...	2	6	...	8	4	
Retinitis ...	1	1	...	2	2	
Entropion ...	...	1	...	1	1	
Other Diseases ...	...	20	...	20	1	
Trachoma ...	2	11	...	13	2	
DISEASES OF THE EAR:—						
Mastoid Abscess ...	...	1	...	1	...	
Otitis Media ...	...	1	...	1	...	
Otorrhœa ...	...	3	...	3	...	
DISEASES OF THE NOSE:—						
Rhinitis ...	...	...	...	...	...	
Coryza ...	...	23	...	23	2	
Epistaxis ...	...	1	...	1	...	
Polypus ...	...	1	...	1	...	
DISEASE OF THE CIRCULATORY SYSTEM:—						
Arterio Sclerosis ...	5	55	19	60	7	
Aneurysm Aorta ...	1	6	4	7	...	
Endocarditis ...	1	8	7	9	...	
Other Diseases ...	8	70	39	78	2	
Valvular Disease, Mitral	3	58	16	61	4	
Valvular Disease, Aortic	1	9	2	10	2	
<i>Carried forward</i> ..	836	4,915	734	5,751	870	

RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	836	4,915	734	5,751	870	
DISEASES OF THE RESPIRATORY SYSTEM:—						
Asthma ...	5	67	...	72	2	
Bronchitis ...	8	388	5	396	10	
Broncho—pneumonia ...	1	217	108	218	8	
Empyema ...	...	8	1	8	1	
Embolism Lung ...	...	2	2	2	...	
Laryngitis ...	...	4	...	4	...	
Phthisis ...	41	439	223	480	35	
Other Diseases ...	1	1	1	2	...	
Pleurisy ...	...	11	1	11	...	
Emphysema ...	...	4	...	4	...	
DISEASES OF THE DIGESTIVE SYSTEM:—						
Appendicitis ...	1	24	4	25	1	
Ascites ...	...	5	...	5	...	
Caries Tooth ...	...	3	...	3	...	
Colitis ...	2	47	10	49	...	
Constipation ...	...	55	...	55	2	
Cholangitis ...	...	...	...	...	...	
Cholecystitis ...	...	9	2	9	...	
Dyspepsia ...	3	19	1	22	...	
Hære—Lip ...	...	1	...	1	1	
Colic ...	...	29	...	29	...	
Diarrhoea and Enteritis ...	...	242	15	242	4	
Fistula in Ano ...	1	20	...	21	2	
Glossitis ...	...	2	...	2	...	
Gastritis ...	2	73	1	75	3	
Hernia ...	4	70	...	74	2	
Hæmorrhoids ...	...	26	...	26	...	
Liver Abscess ...	1	15	4	16	2	
Hepatitis ...	...	12	2	12	...	
Cirrhosis Liver ...	2	51	15	53	2	
Inflammation Tonsils ...	...	17	...	17	1	
Ischio—rectal Abscess ...	...	1	...	1	...	
Intestinal Obstruction ...	...	5	5	5	...	
Jaundice ...	...	13	3	13	...	
Necrosis Jaw ...	...	1	...	1	...	
Other Diseases ...	...	3	...	3	...	
Peritonitis ...	...	8	7	8	...	
Prolapse of Rectum ...	...	3	...	3	...	
Pharyngitis ...	1	7	...	8	...	
Stomatitis ...	...	16	...	16	...	
Sprue ...	...	3	...	3	...	
<i>Carried forward</i> ...	909	6,836	1,144	7,745	946	

RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	909	6,836	1,144	7,745	946	
DISEASES OF THE DIGESTIVE SYSTEM.— <i>Contd.</i>						
Ulcer, Gastric ...	2	6	3	8	2	
Ulcer, Duodenum ...	1	2	...	3	...	
Malignant Disease Bowels ...	...	2	...	2	...	
DISEASE OF LYMPHATIC SYSTEM:—						
Adenitis ...	...	37	...	37	4	
DISEASES OF THE URINARY SYSTEM:—						
Bright's Disease ...	6	171	60	177	15	
Cystitis ...	1	6	...	7	...	
Calculus ...	...	11	...	11	1	
Suppression of Urine ...	...	5	...	5	...	
Pyelitis ...	...	9	1	9	...	
Uræmia ...	...	1	1	1	...	
Stricture Urethra ...	...	16	...	16	1	
Urinary Fistula ...	...	2	...	2	...	
DISEASES OF THE GENERATIVE:—						
<i>Male Organs—</i>						
Epididymitis ...	...	8	...	8	2	
Hydrocele ...	1	14	...	15	1	
Inflammation of Scrotum ...	2	18	...	20	...	
Orchitis ...	...	3	...	3	...	
Phimosis ...	...	27	...	27	2	
Soft Chancre ...	1	144	...	145	17	
Urethritis ...	...	13	...	13	...	
Prostatitis ...	...	4	...	4	...	
LOCAL DISEASE FEMALE ORGANS:—						
Pregnancy ...	...	4	...	4	...	
Abortion ...	...	7	...	7	...	
Retroversion, Uterus ...	...	1	...	1	...	
Endometritis ...	...	2	...	2	...	
Leucorrhœa ...	...	1	...	1	...	
Menorrhagia ...	...	1	...	1	...	
Mastitis ...	...	1	...	1	...	
Overitis ...	1	2	...	3	...	
Puerperal Septicæmia ...	...	3	...	3	1	
Vaginitis ...	...	11	...	11	1	
<i>Carried forward</i> ...	924	7,368	1,209	8,292	993	

RETURN OF DISEASES AND DEATHS IN 1924, AT PENANG HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	924	7,368	1,209	8,292	993	
DISEASES OF LOCOMOTION:—						
Arthritis ...	2	79	...	81	4	
Ost-itis ...	...	7	...	7	...	
Synovitis ...	...	20	...	20	...	
Other Diseases ...	...	16	...	16	...	
DISEASES OF THE CONNECTIVE TISSUES:—						
Abscess ...	6	158	1	164	9	
Cellulitis ...	3	112	1	115	5	
Carbuncle ...	1	18	...	19	...	
Other Diseases ...	...	1	...	1	...	
Sinus ...	4	40	...	44	4	
DISEASES OF THE SKIN:—						
Boils ...	...	4	...	4	...	
Eczema ...	1	67	...	68	2	
Herpes ...	...	13	...	13	1	
Other Diseases ...	...	18	...	18	1	
Scabies ...	3	89	...	92	4	
Urticaria ...	1	2	...	3	...	
Ulcers ...	51	600	1	651	57	
Whitlow ...	...	4	...	4	...	
INJURIES:—						
Shock ...	...	6	4	6	...	
Fractures ...	6	75	8	81	6	
Dislocations ...	1	7	1	8	3	
Wounds ...	17	472	9	489	11	
Poisons ...	...	7	3	7	...	
Burns and Scalds ...	2	31	2	33	3	
PARASITES:—						
Ankylostomiasis ...	29	439	10	468	22	
Ascariasis ...	17	307	...	324	7	
Tænia ...	...	4	...	4	...	
Helminthiasis ...	...	85	1	85	...	
OTHER ADMISSIONS:—						
Malformations ...	...	5	2	5	...	
Tumours Malignant ...	5	72	22	77	...	
No Disease detected and contacts ...	14	639	...	653	2	
Observation ...	3	88	...	91	13	
Bites and stings ...	...	7	...	7	...	
Total ...	1,090	10,860	1,274	11,949	1,145	

## (iii)—PROVINCE WELLESLEY.

RETURN OF DISEASES AND DEATHS IN 1924, AT PROVINCE WELLESLEY.

## HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
INFECTIVE DISEASES : —						
Beri-beri ...	2	3	...	5	...	
Cerebro Spinal Fever ...	...	2	1	2	1	
Chicken-pox ...	...	11	...	11	1	
Cholera ...	...	...	...	...	3	
Dysentery unclassified ...	1	1	...	2	...	
Dysentery-amœbic ...	4	83	15	87	4	
Dysentery-bacillary ...	4	44	13	48	1	
Enteric ...	...	1	1	1	...	
Erysipelas ...	...	3	1	3	...	
Gonorrhœa ...	1	79	...	80	2	
Gonorrhœa and other diseases ...	3	13	...	16	...	
Influenza ...	1	22	...	23	...	
Leprosy ...	...	9	...	9	1	
Malaria unclassified ...	...	39	...	39	...	
Malaria-Tertian ...	...	341	2	341	8	
Malaria-Quartan ...	...	7	...	7	1	
Malaria-Aestivo-autumnal ...	2	292	31	294	7	
Malaria-Chronic ...	...	21	1	21	1	
Mumps ...	...	1	...	1	...	
Chancre and Bubo ...	2	30	...	32	4	
Pneumonia ...	6	57	28	63	3	
Pyrexia ...	4	183	...	187	...	
Rheumatic Fever ...	...	4	...	4	...	
Septicæmia ...	...	14	13	14	...	
Small-pox ...	...	1	...	1	...	
Syphilis-Primary ...	2	47	...	49	1	
Syphilis-Secondary ...	14	50	...	64	1	
Syphilis-Tertiary ...	...	101	9	101	9	
Ulcers ...	...	39	...	39	3	
Rheumatism ...	...	35	...	35	1	
Tuberculosis ...	1	9	3	10	1	
Yaws ...	...	24	...	24	1	
INTOXICATIONS : —						
Alcoholism ...	...	4	...	4	...	
GENERAL DISEASES : —						
Anæmia ...	...	11	5	11	2	
Senility ...	...	10	9	10	...	
Debility ...	...	21	4	21	...	
Carried forward ...	47	1,612	136	1,659	53	

RETURN OF DISEASES AND DEATHS IN 1924, AT PROVINCE WELLESLEY.  
HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ..	47	1,612	136	1,659	53	
LOCAL DISEASES.						
DISEASES OF NEUROTIC SYSTEM :—						
<i>Sub-section 1—</i>						
Neuritis ... ..	...	7	...	7	1	
Myelitis ... ..	...	1	1	1	...	
Abscess of brain ... ..	...	1	1	1	...	
<i>Sub-section 2—</i>						
Apoplexy ... ..	...	1	1	1	...	
Paralysis ... ..	1	12	2	13	2	
Hemiplegia ... ..	5	15	2	20	5	
Others ... ..	2	8	1	10	...	
Epilepsy ... ..	...	1	...	1	...	
Neuralgia ... ..	...	1	...	1	...	
Convulsions ... ..	...	2	2	2	...	
<i>Sub-section 3—</i>						
Melancholy ... ..	...	1	...	1	...	
Dementia ... ..	...	3	...	3	...	
Delusional insanity ... ..	...	15	...	15	1	
DISEASES OF THE EYE :—						
Conjunctivitis ... ..	1	19	...	20	1	
Ulceration of Cornea ... ..	...	4	...	4	...	
Iritis ... ..	...	1	...	1	...	
Cataract ... ..	...	3	...	3	1	
Other Diseases ... ..	...	4	...	4	...	
DISEASES OF THE EAR :—						
Inflammation ... ..	...	12	...	12	...	
Other Diseases ... ..	...	1	...	1	...	
DISEASES OF THE NOSE ... ..						
<i>Carried forward</i> ...	56	1,726	146	1,782	65	

RETURN OF DISEASES AND DEATHS IN 1924, AT PROVINCE WELLESLEY.  
HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	56	1,726	146	1,782	65	
LOCAL DISEASES.— <i>Contd.</i>						
DISEASES OF THE CIRCULATORY SYSTEM:—						
Morbus cordis ...	...	2	1	2	...	
Endocarditis ...	1	11	8	12	1	
Valvular Mitral ...	...	11	2	11	...	
Valvular Aortic ...	...	3	1	3	1	
Phlebitis ...	...	1	...	1	...	
Aneurism ...	...	2	1	2	...	
DISEASES OF THE RESPIRATORY SYSTEM:—						
Asthma ...	1	77	...	78	4	
Bronchitis ...	5	136	...	141	5	
Broncho-pneumonia ...	...	52	12	52	1	
Phthisis ...	10	96	66	106	5	
Abscess of Lung ...	...	...	...	...	...	
Fleurisy ...	1	22	1	23	...	
Empyema ...	...	2	2	2	...	
DISEASES OF THE DIGESTIVE SYSTEM:—						
Stomatitis ...	...	3	1	3	...	
Caries of Teeth ...	...	1	...	1	...	
Sore throat ...	...	2	...	2	...	
Inflammation of tonsils ...	...	2	...	2	...	
Gastritis ...	1	25	...	26	...	
Ulceration of stomach ...	...	1	...	1	...	
Dyspepsia ...	...	2	...	2	...	
Enteritis ...	...	18	7	18	...	
Appendicitis ...	...	4	...	4	...	
Colitis ...	1	21	...	22	4	
Ulceration of Intestines ...	...	1	...	1	...	
Other Diseases ...	...	4	1	4	...	
Hernia ...	...	10	...	10	...	
Diarrhœa ...	1	59	5	60	...	
Constipation ...	...	23	...	23	...	
Colic ...	...	19	...	19	...	
Hemorrhoids ...	...	4	...	4	...	
Cholecystitis ...	...	1	1	1	...	
Hepatitis-acute ...	1	8	3	9	...	
Ischio Rectal Abscess ...	...	1	...	1	...	
<i>Carried forward ...</i>	68	2,350	258	2,428	86	

## RETURN OF DISEASES AND DEATHS IN 1924, AT PROVINCE WELLESLEY.

HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	68	2,350	258	2,428	86	
LOCAL DISEASES.— <i>Contd.</i>						
<i>Diseases of the Degestive System.—Contd.</i>						
Fistula in Ano ...	I	5	...	6	...	
Cirrhosis liver ...	...	18	6	18	...	
Jaundice ...	...	2	...	2	...	
Peritonitis ...	...	3	I	3	I	
Ascites ...	...	I	...	I	...	
DISEASES OF THE LYMPHATIC SYSTEM :—						
Inflammation of Lymphatic Gland ...	I	5	...	6	I	
DISEASES OF THE URINARY SYSTEM :—						
Acute Nephritis ...	...	13	7	13	...	
Bright's Disease ...	3	45	19	48	4	
Calculus ...	...	I	I	I	...	
Cystitis ...	...	I	...	I	...	
Vesical Calculus ...	...	I	...	I	...	
Suppression of Urine ...	...	I	...	I	...	
DISEASES OF THE GENERATIVE ORGANS :—						
<i>Male Organs—</i>						
Phymosis ...	I	7	...	8	...	
Urethritis ...	...	4	...	4	...	
Stricture ...	...	6	...	6	...	
Soft chancre ...	4	55	...	59	3	
Hydrocele ...	...	6	...	6	I	
Orchitis ...	...	4	...	4	I	
<i>Female Organs—</i>						
Ovaritis ...	...	2	...	2	...	
Endometritis ...	...	2	...	2	...	
Displacement of Uterus ...	I	...	...	I	...	
Vaginitis ...	I	4	...	5	I	
<i>Carried forward</i> ...	80	2,536	292	2,626	98	

## RETURN OF DISEASES AND DEATHS IN 1924, AT PROVINCE WELLESLEY.

HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	80	2,536	292	2,626	98	
LOCAL DISEASES.— <i>Contd.</i>						
DISEASES OF THE GENERATIVE ORGANS.— <i>Contd.</i>						
Leucorrhœa ...						
Abortion ...	...	4	...	4	...	
Delayed Labour ...	...	2	...	2	...	
Puerperal Septicæmia...	...	10	1	10	...	
	...	2	...	2	...	
DISEASES OF THE LOCOMO- TION:—						
Ost-itis ...	1	9	...	10	1	
Arthritis ...	...	12	1	12	2	
Myalgia ...	4	38	...	42	...	
Bursitis ...	1	8	...	9	...	
DISEASES OF THE CONNECTIVE TISSUE:—						
Cellulitis ...	8	36	1	44	2	
Abscess ...	1	66	1	67	1	
Elephantiasis ...	...	3	...	3	...	
DISEASES OF THE SKIN:—						
Ulcers ...	29	271	3	300	25	
Eczema ...	1	22	...	23	1	
Boil ...	...	1	...	1	...	
Carbuncle ...	...	1	...	1	...	
Herpes Zoster ...	...	1	...	1	...	
Sinus ...	...	5	...	5	1	
Whitlow ...	...	2	...	2	...	
Other Diseases ...	...	1	1	1	...	
Tinea ...	...	3	...	3	...	
Scabies ...	4	52	...	56	1	
Injuries—						
General ...	...	7	1	7	...	
Local ...	14	351	5	365	14	
Tumours ...	1	16	4	17	2	
Nematoda—						
Ascaris ...	6	189	...	195	10	
Ankylostomiasis ...	8	439	43	447	25	
Bites and stings ...	1	6	...	7	...	
Observation ...	1	83	...	84	3	
N. D. D. ...	3	79	...	82	3	
Total ...	163	4,255	353	4,428	189	

## (iv)—MALACCA.

## RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
INFECTIOUS DISEASES:—						
Beri-beri ... ..	34	234	24	268	40	{ 3 cases cured re- mained for further treatment.
Chicken-pox ... ..	...	11	...	11	...	
Dengue Fever ... ..	...	4	...	4	...	
Dysentery, Amœbic ... ..	8	164	44	172	10	
Dysentery, Bacillary ... ..	...	12	4	12	...	
Dysentery, unclassified ... ..	...	5	4	5	...	
Enteric Fever ... ..	...	1	1	1	...	
Erysipelas ... ..	2	3	...	5	1	
Gangrene ... ..	1	5	2	6	...	
Gonorrhœa ... ..	1	76	...	77	5	
Influenza ... ..	1	66	7	67	2	
Leprosy ... ..	...	15	...	15	3	
Malaria Fever Q. T. ... ..	3	46	1	49	...	
Malaria Fever B. T. ... ..	1	174	...	175	3	
Malaria Fever M. T. ... ..	12	415	35	427	21	
Malaria Chronic ... ..	3	125	11	128	8	
Measles ... ..	1	5	...	6	...	
Mumps ... ..	...	7	...	7	...	
Pneumonia, Lobar ... ..	3	74	27	77	...	
Pyæmia ... ..	1	7	5	8	...	
Pyrexia of uncertain origin ... ..	4	119	...	123	1	
Hydrophobia ... ..	...	1	1	1	...	
Phageolœua ... ..	...	1	1	1	...	
Septicæmia ... ..	...	2	2	2	...	
Syphilis Primary ... ..	3	33	...	36	4	
Syphilis Secondary ... ..	14	204	1	218	18	
Syphilis Tertiary ... ..	5	34	4	39	7	
Syphilis Congenital ... ..	...	3	...	3	1	
Whooping Cough ... ..	...	1	...	1	...	
Tetanus ... ..	...	5	1	5	...	
Yaws ... ..	...	3	...	3	1	
Tuberculosis ... ..	...	4	3	4	...	
INTOXICATIONS:—						
Alcoholism ... ..	...	4	...	4	...	
Delerium Tremens ... ..	...	2	...	2	...	
GENERAL DISEASES:—						
Anæmia ... ..	...	2	...	2	...	
Diabetes ... ..	...	6	1	6	...	
Carried forward ... ..	97	1,873	179	1,970	125	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	97	1,873	179	1,970	125	
MORBID INCIDENT:—						
New Growth Malignant ...	...	15	10	15	1	
Cyst ...	...	8	...	8	...	
NERVOUS SYSTEM:—						
Neuritis Local ...	2	9	...	11	1	
Encephalitis ...	...	1	1	1	...	
Myelitis ...	...	1	...	1	...	
Facial Palsy ...	1	3	...	4	1	
Apoplexy ...	...	2	2	2	...	
Locomotor Ataxia ...	...	2	...	2	1	
Puerperal eclampsia ...	...	1	1	1	...	
Spastic Paraplegia ...	1	7	...	8	4	
Paraplegia ...	...	2	...	2	...	
Hemiplegia ...	4	15	4	19	3	
Chorea ...	1	1	...	2	1	
Epilepsy ...	2	8	...	10	2	
Hiccough ...	...	1	...	1	...	
Convulsion ...	...	12	7	12	...	
Neurasthenia ...	...	3	...	3	...	
Hemicrania ...	...	1	...	1	...	
Hysteria ...	...	1	...	1	...	
Neuralgia ...	...	8	...	8	1	
EYE DISEASE:—						
Conjunctivitis ...	...	20	...	20	...	
Ulcer Cornea ...	3	17	...	20	...	
Opacity Cornea ...	...	5	...	5	1	
Iritis ...	...	1	...	1	...	
Cataract ...	3	10	...	13	5	
Panophthalenitis ...	...	2	...	2	1	
Blepharitis ...	...	1	...	1	...	
Ophthalmia ...	...	3	...	3	...	
Amblyopia ...	...	1	...	1	...	
Glaucoma ...	...	1	...	1	...	
Stye ...	...	2	...	2	...	
EAR DISEASE:—						
Otitis Media ...	1	1	...	2	...	
Abscess Mastoid ...	...	1	...	1	...	
<i>Carried forward</i> ..	115	2,039	204	2,154	147	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	115	2,039	204	2,154	147	
NOSE DISEASE:—						
Polypus ...	...	1	...	1	...	
CIRCULATORY SYSTEM:—						
Dilatation Heart ...	...	9	6	9	...	
Valvular Disease Heart ...	1	20	7	21	1	
Cardiac Failure ...	...	2	2	2	...	
Endocarditis ...	...	1	...	1	...	
Myocarditis ...	...	2	1	2	...	
Arterio Sclerosis ...	7	15	8	22	3	
Phlebitis ...	...	1	...	1	...	
RESPIRATORY SYSTEM:—						
Asthma ...	1	33	...	34	1	
Laryngitis ...	...	1	...	1	...	
Bronchitis ...	2	110	...	112	2	
Oedema of Glotts ...	...	1	1	1	...	
Broncho Pneumonia ...	?	26	12	28	...	
Phthisis ...	15	160	75	175	19	
Pleurisy ...	...	9	...	9	...	
DIGESTIVE SYSTEM:—						
Stomatitis ...	...	5	...	5	...	
Pharyngitis ...	...	8	...	8	...	
Tonsillitis ...	...	3	...	3	...	
Caries Teeth ...	...	1	...	1	...	
Gastric Ulcer ...	1	25	3	26	...	
Alveolar Abscess ...	...	7	...	7	...	
Pyorrhœa Alveolaris ...	1	1	...	2	...	
Gastritis ...	...	16	...	16	2	
Dyspepsia ...	...	36	...	36	1	
Colitis ...	...	4	...	4	...	
Enteritis ...	...	13	2	13	...	
Appendicitis ...	...	4	...	4	...	
<i>Carried forward</i> ...	145	2,553	321	2,698	176	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	145	2,553	321	2,698	176	
<b>DIGESTIVE SYSTEM.—<i>Contd.</i></b>						
Duodenal Ulcer ...	I	I	...	2	...	
Intestinal obstruction ...	...	I	I	I	...	
Colic, Intestinal ...	...	5	...	5	...	
Diarrhœa ...	...	36	...	36	2	
Constipation ...	...	10	...	10	...	
Hernia, Ing. Reducible ...	...	10	I	10	...	
Hernia, Strangulated ...	...	6	...	6	...	
Ischio Rectal Abscess ...	...	6	...	6	I	
Fistula in Ano ...	...	3	...	3	...	
Fissure, Anus ...	...	2	...	2	...	
Hæmorrhoids ...	...	13	...	13	...	
Supp. Cholangitis ...	...	2	I	2	...	
Hepatitis ...	...	5	...	5	...	
Hepatic abscess ...	...	8	...	8	2	
Cancer Liver ...	...	3	I	3	...	
Congestion of Liver ...	...	I	...	I	...	
Septic Peritonitis ...	...	2	2	2	...	
Jaundice ...	I	5	...	6	...	
Cirrhosis Liver ...	3	17	10	20	...	
<b>LYMPHATIC SYSTEM:—</b>						
Bubo, Suppurating ...	3	44	...	47	3	
Lymphadenitis ...	...	5	...	5	...	
Splenitis ...	...	3	...	3	...	
<b>URINARY SYSTEM:—</b>						
Bright's Disease ...	6	129	41	135	4	
Cystitis ...	...	2	...	2	...	
Incontinence of Urine ...	...	I	...	I	...	
Albuminuria ...	...	11	...	11	...	
Bacilluria ...	...	3	...	3	...	
Hæmaturia ...	...	I	...	I	...	
Renal Colic ...	...	2	...	2	...	
Vesical Calculus ...	I	6	...	7	...	
<b>GENERATIVE SYSTEM:—</b>						
Urethritis ...	...	4	...	4	...	
Stricture of Urethra ...	...	2	...	2	...	
Hypertrophy of prostate ...	...	I	...	I	...	
<i>Carried forward</i> ...	160	2,903	378	3,063	188	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	160	2,903	378	3,063	188	
GENERATIVE SYSTEM.— <i>Cntd.</i>						
Vulvitis ...	...	1	...	1	...	
Phimosis ...	...	4	...	4	...	
Menorrhagia ...	...	1	...	1	...	
Soft Chancre ...	4	60	...	64	3	
Amenorrhœa ...	...	1	...	1	...	
Sloughing Scrotum ...	...	1	1	1	...	
Hydrocele ...	...	7	...	7	1	
Epididymitis ...	...	2	...	2	...	
Orchitis ...	2	6	...	8	...	
Oyaritis ...	...	3	...	3	...	
Varicocele ...	...	1	...	1	...	
Retroversion, Uterus ...	...	1	...	1	...	
Leucorrhœa ...	...	1	...	1	...	
AFFECTIONS CONNECTED- WITH PREGNANCY:—						
Pregnancy ...	...	17	...	17	...	
Abortion ...	...	3	...	3	...	
Concealed Hæmorrhage ...	...	1	1	1	...	
AFFECTIONS CONNECTED WITH PARTURITION:—						
Parturition ...	...	26	...	26	2	
Ruptured Uterus ...	...	2	1	2	...	
Ruptured Perineum ...	...	1	...	1	...	
Premature Birth ...	...	2	2	2	...	
DISEASE OF THE BREAST:—						
Supp. Mastitis ...	1	...	...	1	...	
<i>Carried forward</i> ...	167	3,044	383	3,211	194	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	167	3,044	383	3,211	194	
ORGANS OF LOCOMOTION:—						
Periostitis ...	...	4	...	4	1	
Caries, Spine ...	1	4	...	5	1	
Necrosis, Bone ...	2	9	...	11	2	
Torticollis ...	...	1	...	1	...	
Arthritis ...	6	46	...	52	7	
Myalgia ...	...	8	...	8	...	
Ankylosis joint ...	...	3	...	3	...	
Lumbago ...	1	5	...	6	...	
Talipes Equino-barus ...	2	2	...	4	...	
Myositis ...	1	...	...	1	...	
CONNECTIVE TISSUE:—						
Cellulitis ...	7	38	1	45	7	
Abscess ...	3	84	...	87	5	
Elephantiasis ...	...	4	...	4	...	
SKIN DISEASE:—						
Urticaria ...	...	1	...	1	...	
Eczema ...	3	44	...	47	1	
Dermatitis ...	...	1	...	1	...	
Psoriasis ...	1	1	...	2	...	
Seborrhœa ...	...	1	...	1	...	
Impetigo ...	...	4	...	4	...	
Acne ...	...	1	...	1	...	
Carbuncle ...	...	2	...	2	...	
Boils ...	...	3	...	3	...	
Herpes Zoster ...	...	1	...	1	...	
Ulcer ...	48	367	...	415	41	
NAIL DISEASE:—						
Whitlow ...	1	6	...	7	...	
Onychia ...	...	1	...	1	...	
GENERAL INJURIES ...	...	17	3	17	...	
LOCAL INJURIES ...	12	326	11	338	6	
<i>Carried forward</i> ...	255	4,028	398	4,283	265	

RETURN OF DISEASES AND DEATHS IN 1924, AT MALACCA HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL		Total cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	255	4,028	398	4,283	265	
POISONS :—						
Corrosive Poisoning ...	...	I	I	I	...	
Datura Poisoning ...	...	I	...	I	...	
Jeyer fluid Poisoning ...	...	I	...	I	...	
Tiger bite ...	...	I	...	I	...	
Snake bite ...	...	I	I	I	...	
Monkey bite ...	...	I	...	I	...	
Buffalo Gore ...	I	...	...	I	...	
Pig Gore ...	...	I	...	I	...	
Dog bite ...	...	I	...	I	...	
Fish Sting ...	I	2	...	3	...	
PARASITES :—						
Tinea Imbricata ...	I	2	...	3	...	
Ringworm ...	...	I	...	I	...	
Roundworm ...	...	16	...	16	...	
Tapeworm ...	...	4	...	4	I	
Scabies ...	3	90	...	93	3	
Ankylostomiasis ...	6	157	13	163	13	
Filariasis ...	...	2	...	2	...	
Dracunculus Medinensis ...	...	I	...	I	...	
Observation ...	11	193	...	204	3	
Observation for Insanity	3	40	...	43	I	
Total ...	281	4,544	413	4,825	286	

## V.—LABUAN.

RETURN OF DISEASES AND DEATHS IN 1924, AT THE CIVIL HOSPITALS, LABUAN.

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
I. INFECTIVE DISEASES :—						
Beri-beri ... ..	I	4	...	5	...	
Elephantiasis ... ..	...	2	...	2	...	
Gonorrhœa ... ..	...	5	...	5	...	
Gonorrhœal Arthritis ... ..	...	6	...	6	...	
Malaria Quartan ... ..	...	4	...	4	...	
Malaria Subtertian ... ..	3	78	4	81	I	
Malaria Mixed ... ..	...	19	...	19	...	
Malaria Chronic ... ..	...	9	...	9	I	
Malaria N. D. ... ..	...	7	...	7	...	
Pneumonia (sub-acute) ... ..	...	2	...	2	...	
Syphilis Congenital ... ..	...	I	...	I	...	
Syphilis Primary ... ..	...	5	...	5	...	
Syphilis Secondary ... ..	...	9	...	9	...	
Syphilis Tertiary ... ..	...	I	...	I	...	
Tuberculosis ... ..	3	7	5	10	...	
Yaws ... ..	...	2	...	2	...	
2. INTOXICATION :—						
Opium Habit ... ..	...	I	...	I	...	
Opium Poisoning ... ..	...	I	I	I	...	
3. GENERAL DISEASES :—						
Anæmia ... ..	...	I	...	I	...	
Debility ... ..	I	...	...	I	...	
4. DISEASES OF THE NERVOUS SYSTEM :—						
Delusional insanity ... ..	...	3	...	3	...	
Unsound mind ... ..	...	I	...	I	...	
5. DISEASES OF THE EYES :—						
Corneal Ulcer ... ..	...	I	...	I	I	
Iritis ... ..	...	2	...	2	...	
Panophthalmitis ... ..	...	I	...	I	...	
Prolapse of Iris ... ..	...	I	...	I	...	
Trachoma ... ..	...	5	...	5	...	
Carried forward ... ..	8	178	10	186	3	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE CIVIL HOSPITALS,  
LABUAN.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	8	178	10	186	3	
6. DISEASES OF THE EAR:—						
Ulcer middle ear ...	...	1	...	1	...	
7. DISEASES OF THE CIRCULA- TORY SYSTEM:—						
Arterio Sclerosis ...	...	1	...	1	...	
Mitral Stenosis V. D. H.	1	2	1	3	...	
8. DISEASES OF THE RESPIRA- TORY SYSTEM:—						
Bronchitis ...	1	6	...	7	...	
Broncho Pneumonia ...	...	1	...	1	...	
Pleurisy ...	...	1	...	1	...	
9. DISEASES OF THE TEETH AND GUMS:—						
Alveolar Abscess ...	...	1	...	1	...	
Pyorrhœa Alveolaries ...	...	1	...	1	...	
10. DISEASES OF THE DIGES- TIVE SYSTEM:—						
Colitis (mucous) ...	...	4	...	4	...	
Diarrhœa ...	...	4	1	4	...	
Gastritis ...	...	1	...	1	...	
Hæmorrhoids mixed ...	...	1	...	1	...	
Hepatic Cirrhosis ...	...	1	...	1	...	
11. DISEASE OF THE LYMPHA- TIC SYSTEM:—						
Lymphangitis and Lym- phadinitis ...	...	2	...	2	...	
<i>Carried forward</i> ...	10	205	12	215	3	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE CIVIL HOSPITALS,  
LABUAN.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions	Deaths.			
<i>Brought forward</i> ...	10	205	12	215	3	
12. DISEASE OF THE URINARY ORGAN:—						
Nephritis ...		2	1	2	...	
13. DISEASE OF THE MALE ORGANS OF GENERATION:—						
Urethral fistula ..	...	1	...	1	...	
14. DISEASE OF THE FEMALE ORGANS OF GENERATION:—						
Retained placenta ...		...	...	1	...	
15. DISEASES OF THE LOCO- MOTOR SYSTEM:—						
Necrosis 2nd toe Phalanx	...	1	...	1	...	
Ost-itis 2nd Phalanx foot	1	...	...	1	...	
Tubercular abscess Rib and Shoulder ...	...	3	...	3	1	
16. DISEASES OF THE CONNec- TIVE TISSUE:—						
Abscess Axilla .	...	1	...	1	...	
Abscess Knee ...	...	1	...	1	...	
Abscess Foot ...	...	3	...	3	...	
Abscess Thigh ...	...	1	...	1	...	
Cellulitis ...	...	6	1	6	...	
17. DISEASES OF THE SKIN:—						
Boils ...	...	1	...	1	...	
Eczema ...	...	1	...	1	...	
Sores, septic ...	...	6	...	6	...	
Ulcers ...	...	6	...	6	1	
Whitlow finger ..	...	1	...	1	...	
<i>Carried forward</i> ...	12	239	14	251	5	

RETURN OF DISEASES AND DEATHS IN 1924, AT THE CIVIL HOSPITALS,  
LABUAN.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1923.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1924.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	12	239	14	251	5	
18. INJURIES :—						
Abrasions ...	...	2	...	2	...	
Bites and rip by Figs ...	...	1	...	1	...	
Concussion brain ...	...	1	1	1	...	
Contusions ...	...	3	...	3	...	
Contused scalp wound ...	...	1	...	1	...	
Contused left Lung ...	...	1	...	1	...	
Fracture and Laceration of fingers ...	...	1	...	1	...	
Simple fracture femur lower 3rd ...	1	...	...	1	...	
Ruptured gluteus maximus ...	...	1	...	1	...	
Wound heel ...	...	2	...	2	...	
Sprained ankle ...	...	2	...	2	...	
Wheals from cane ...	...	1	...	1	...	
19. PARASITES :—						
Ankylostomiasis ...	.	5	...	5	1	
20. OBSERVATION ...						
...	...	5	...	5	...	
21. NO DISEASE DISCOVER- ABLE ...						
...	...	3	...	3	...	
Total ...	13	268	15	281	6	

## APPENDIX "F".

## OUT-DOOR DISPENSARIES, STRAITS SETTLEMENTS.

## I.—SINGAPORE.

## NORTH CANAL ROAD.

REPORT BY N. RASIAH, L.M.S., *Singapore*.

The number of patients treated for the year was 14,422 as against 14,198 in 1923.

The total attendance was 33,238 as against 34,967 in 1923.

The average daily attendance was 123.15 as against 128.85 in 1923. Out of 14,422 new cases treated 6,835 were paying, 5,442 were Government servants and 2,145 were indigent patients.

The nationalities of those treated were as follows:—

				Males.	Females.
				—	—
Europeans	...	...	...	83	2
Eurasians	...	...	...	146	10
Chinese	...	...	...	6,094	813
Malays	...	...	...	2,917	82
Indians	...	...	...	3,918	246
Others	...	...	...	93	18
				—	—
				13,251	1,171
				—	—

The principal diseases treated were:—Malaria 219, Beri-beri 13, Neuritis 727, Dysentery 47, Various Bowel Complaints 1,325, Rheumatism 906, Phthisis 61, Pneumonia 31, Broncho Pneumonia 13, Bronchitis 470, Intestinal Parasites 728, Wounds and Injuries 585, Burns and scalds 45, Eye diseases 397, Abscesses and Cellulitis 156, Ulcers 1,904, Myalgia 148 and Neuralgia 154.

## VENEREAL CLINICS (TANJONG PAGAR AND NORTH CANAL ROAD).

REPORT BY R. W. C. KELLY, M.R.C.S., L.R.C.P., *Medical Officer*  
*in charge Venereal Disease Clinics.*

The points dealt with in this report are as follows:—

1. *Number of new admissions.*—Classified under the respective heads of Syphilis, Gonorrhœa, etc. The numbers admitted to the two clinics being shown separately.

2. *Total number of attendances.*—These are also shown separately for each clinic.

3. *Average daily attendance.*—At both centres.

4. *Drugs employed in the treatment of Syphilis and Gonorrhœa.*—I have here just briefly mentioned the drugs that have been given a trial from time to time, and regret I am unable to give any opinion as to the relative merits of the drugs employed owing to the difficulty in keeping in constant touch with the patients. To give some idea of this, I attach a table showing the number of cases who have received their course, *i.e.*, two courses of N. A. B. and show in some instances a negative Wasserman, those who attended for one or more injections, and those who only came once. As regards the Arsenical preparations I find they are more or less alike in their action.

As regards Gonorrhœa, I still use Sulpharsenol commencing with .30 grms. every 4 days for 4 injections then raising to .54 grms. weekly for two injections. This drug is used subcutaneously and though very painful, producing a localised reaction (which soon passes off), is I have found quite the best drug so far. This is combined with irrigation of the urethra with either an alkaline solution of acriflavine (1-4,000) or one of the other drugs mentioned. In long standing cases massage of the prostate is combined with the above treatment with very gratifying results.

5. Chart showing the number of cases admitted to the clinics since their openings in 1922. As will be seen there is a tendency for an upward curve all the time, which proves the need for these centres, and their evident popularity with the poor.

6. A statement showing the number of cases (1) new, (2) old, (3) total attendances, month by month at the two centres.

7. A tabulated statement showing the attendances of Syphilis and Gonorrhœa cases injections, and also wasserman reactions done during the year:—

## TANJONG PAGAR.

<i>Months.</i>	<i>No. of week days.</i>	<i>No. of new cases.</i>	<i>No. of old cases.</i>	<i>Total.</i>	<i>Total Attendances.</i>
January	... 25	82	42	124	394
February	... 22	58	38	96	316
March	... 26	83	35	118	495
April	... 23	75	33	108	391
May	... 22	55	26	81	300
June	... 23	76	31	107	327
July	... 27	83	41	124	441
August	... 24	89	45	134	437
September	... 26	69	59	128	445
October	... 24	65	36	101	416
November	... 22	73	40	113	373
December	... 25	83	21	104	485
Total	... 289	891	447	1,338	4,820

Average daily attendance 16.67.

## NORTH CANAL ROAD.

<i>Months.</i>	<i>No. of week days.</i>	<i>No. of new cases.</i>	<i>No. of old cases.</i>	<i>Total.</i>	<i>Total Attendances.</i>
January	... 23	264	474	738	810
February	... 22	211	448	659	688
March	... 26	269	715	984	996
April	... 23	264	634	898	902
May	... 26	333	856	1,189	1,210
June	... 23	253	649	902	936
July	... 27	327	676	1,003	1,065
August	... 24	241	712	953	993
September	... 26	257	859	1,116	1,168
October	... 27	291	886	1,177	1,200
November	... 22	213	752	965	1,000
December	... 22	257	432	689	727
Total	... 300	3,180	8,093	11,273	11,695

Average daily attendance 40.05.

## NUMBER OF NEW CASES.

<i>Disease.</i>		<i>North Canal Road.</i>	<i>Tanjong Pagar.</i>	<i>Grand Total.</i>
Syphilis ...	...	2,135	641	2,776
Gonorrhœa ...	...	469	169	638
Bubo ...	...	285	14	294
Soft Sores ...	...	195	13	208
Non Venereal ...	...	101	54	155
Total Number of attendances		11,695	4,820	16,515
Average daily attendance ...		40.05	16.67	56.72

## DRUGS EMPLOYED FOR THE TREATMENT OF SYPHILIS.

## 1. Arsenic preparations:—

Neo Salvarsan.  
 Novarsenobilon.  
 Eparsenol.  
 Sulpharsenol.

## 2. Salts of Bismuth:—

1. Trepol.  
 2. Neo Trepol.  
 3. Luatol (Sol. Pot. Bismuth Tart—May and Baker) well tolerated and non-painful.  
 4. Emulsio Sod. Bismuth Tart (Medical Hall formula).

## 3. 1. Calomel cream.

2. Mercurial cream.

## DRUGS EMPLOYED FOR THE TREATMENT OF GONORRHŒA.

## 1. By injection:—

(a) Sulpharsenol.  
 (b) Sufreol.  
 (c) Sero bacterin.  
 (d) Vaccine.

## 2. By irrigation:—

(a) Pot Permanganate.  
 (b) Acriflavine.  
 (c) Mucosan.  
 (d) Acykol.

## SYPHILIS AND GONORRHŒA CASES ATTENDED FOR INJECTIONS, 1924.

<i>Disease.</i>	<i>Full Course.</i>	<i>First Course.</i>	<i>3 or more injections.</i>	<i>Less than 3 injections.</i>	<i>Once only.</i>	<i>W. Reaction.</i>	<i>Negative.</i>
Syphilis (North Canal Road)	9	70	347	600	1,593	259 42 13	108
Syphilis (Tanjong Pagar Road)	5	47	56	205	343	99 25 14	63
Total ...	14	117	403	805	1,936	358 67 27	171

<i>Gonorrhœa (Disease).</i>	<i>Cured.</i>	<i>2 or 3 Injections.</i>	<i>Once only.</i>
North Canal Road ...	35	96	257
Tanjong Pagar ...	17	58	86
Total ...	52	154	343

## WOMEN AND CHILDREN'S OUT-DOOR DISPENSARY, KANDANG KERBAU.

REPORT BY L. S. O'MAY, M.B., *Lady Medical Officer*.

The number of persons treated during the year was as follows:—

<i>New.</i>	<i>Repetitions.</i>	<i>Total.</i>
—	—	—
7,572	16,543	24,115

The corresponding figures for 1923 were:—

<i>New.</i>	<i>Repetitions.</i>	<i>Total.</i>
—	—	—
6,146	9,149	15,295

Of the 7,572 new cases in 1924, 3,671 were children:—

<i>Nationalities.</i>					
Chinese	...	...	...	...	4,161
Eurasians	...	...	...	...	1,332
Tamils	...	...	...	...	979
Malays	...	...	...	...	646
Jews	...	...	...	...	207
Japanese	...	...	...	...	118
Bengalis	...	...	...	...	47
Sikhs	...	...	...	...	46
Others	...	...	...	...	36
Total					7,572

There were 843 cases of *venereal disease* giving a percentage of 11.13:—

Syphilis	...	...	...	...	222
Gonorrhœa	...	...	...	...	476
Syphilis and Gonorrhœa	...	...	...	...	86
Congenital Syphilis	...	...	...	...	44
Gonorrhœa Ophthalmia	...	...	...	...	15
Total					843

The number of *fever* cases were:—

Malaria	...	...	107	...	Benign tertian	...	85
					Subtertian	...	12
					Quartan	...	5
					Mixed Infection	...	5
Fever unspecified	...	...	319				
Total							426

## OUT-DOOR DISPENSARY, PAYA LEBAR.

REPORT BY N. N. MITTRA, *Assistant Medical Officer*.

The Dispensary was opened on November 8, 1922.

*Work done.*—The Dispensary was open on 296 days. The number of patients treated during the year was 4,699 as against 4,147 in the previous year, and the number of attendances was 12,646 as against 14,914 in the year before. The daily average attendance, during the year, was 42.7 as against 49.7 in 1923. The number of Male patients was 3,146 and that of Female patients was 1,553.

The principal diseases treated and their number were as follows:—

Malaria	...	...	...	...	356
Venereal Diseases	...	...	...	...	220
Bronchitis	...	...	...	...	284
Ulcers	...	...	...	...	754
Round Worms	...	...	...	...	542
Wounds and Injuries	...	...	...	...	402

The number of Malaria cases attending during the year was 356 as against 417 in the year 1923.

The addresses of patients suffering from Malaria were noted down and supplied to the Sanitary Inspector for necessary action. A "spot Map" of all such cases was also kept.

Free injections of "Neo Salvarsan" were given to all primary and secondary cases of syphilis, the number of such injections given, during the year was 104 as against 96 in the previous year.

#### OUT-DOOR DISPENSARY, BUKIT TIMAH.

REPORT BY S. THAMBIPILLAY, L.M.S., *Singapore*.

Assistant Surgeon Menon was in charge until February 29th, 1924, when I took charge.

The number of patients treated during the year was 2,832 as against 2,790 in 1923. The total attendance was 6,223 as against 6,268 in 1923. The average daily attendance was 31.75 as against 32.01 in 1923.

The nationalities of cases treated were:—

				Males.	Females.
				—	—
Europeans	...	...	...	6	1
Eurasians	...	...	...	17	14
Chinese	...	...	...	1,279	480
Indians	...	...	...	763	108
Malays	...	...	...	34	9
Others	...	...	...	114	8

The principal diseases treated were:—

Malaria 1,026; Venereal diseases 140; Bronchitis 247; Lobar and Broncho Pneumonia 30; Pyrexia 14; Influenza 35; Constipation 216; Diarrhoea and Dysentery 50; Dyspepsia and Gastritis 57; Anæmia and Debility 66; Ascariasis 160; Disease of Skin 105; Wounds and other Injuries 200; Ulcers 219.

*Malaria*.—Out of 1,026 cases under report 51 cases were chronic malaria. The number of cases treated in 1923 was 1,274. The majority of the cases came from Bukit Panjang, Jurong, and Mandai districts. The number of cases from Bukit Timah district was comparatively small.

The number of cases treated for malaria were highest in May and June, the number of cases being 102 and 91 respectively as against 135 and 120 being the highest for the same months in 1923. There was another wave during October, 1924, the number of cases being 100. Otherwise the number of cases kept between 70 and 80.

The names, addresses, and place where the malaria was probably first contracted were noted down in a book, and the Anti-malarial and Sanitary Inspectors visited such places for necessary action.

The connection with the above a rough spot map of malarial cases treated at the Dispensary was prepared every month.

*Venereal Diseases.*—Free injections of N. A. B. were given in cases of syphilis. The number of injections given during the year was 98. Most of the cases were of primary and secondary stages. A number of them received two or more injections.

I made several visits to the villages and estates to make the acquaintance of the people and to induce the sick to come to the dispensary for treatment.

*Reformatory.*—Eighty visits were paid during the year. One case of epilepsy, one case of chronic bronchitis, and a few other cases of scabies were sent to Hospital for treatment. Cases of minor complaints were treated at the Reformatory itself.

The general health of the boys was good.

#### OUT-DOOR DISPENSARY, JOO CHIAT ROAD.

REPORT BY ASSISTANT SURGEON LEE KEK SOON, L.M.S., *Singapore.*

The number of patients treated during the year was 3,530 and the total number of attendances was 12,100. The number of cases of venereal diseases was 330, and 599 intravenous injections of organic arsenical preparations were given for syphilis and yaws. The Dispensary was open for 295 days with an average daily attendance of 52.9.

Out of 3,530 patients treated, 1,128 were paying patients, 604 Government servants and their families, and 1,798 indigent patients and school children.

The nationalities of those treated were as follows:—

				<i>Males.</i>	<i>Females.</i>
				—	—
Europeans	...	...	...	2	—
Eurasians	...	...	...	238	185
Chinese	...	...	...	1,286	532
Malays	...	...	...	456	197
Indians	...	...	...	471	97
Others	...	...	...	46	20
				—	—
			Total	2,499	1,031

The principal diseases treated were:—

Malaria	...	...	...	...	87
Influenza	...	...	...	...	202
Dysentery	...	...	...	...	34
Syphilis	...	...	...	...	249
Gonorrhœa	...	...	...	...	81
Bronchitis	...	...	...	...	620
Gastric complaints	...	...	...	...	76
Bowels complaints	...	...	...	...	171
Parasitic Diseases	...	...	...	...	448
Wounds and Injuries	...	...	...	...	141
Ulcers	...	...	...	...	288
Beri-beri	...	...	...	...	110
Yaws	...	...	...	...	43
Eye Diseases	...	...	...	...	59
Skin Diseases	...	...	...	...	90

## OUT-DOOR DISPENSARY, PASIR PANJANG.

The Dispensary was opened on 23rd October, 1923.

The number of patients treated to the end of the year was 532 and the total number of attendances was 736 as against 77 patients and 92 attendances in the previous year.

It is hoped to remove the present out-door dispensary to a more popular site next year when an Assistant Surgeon will be put in charge.

## II.—PENANG.

## CHAWRASTA OUT-DOOR DISPENSARY.

REPORT BY ASSISTANT SURGEON S. MOHAMED BABOO, L.M.S.

1. The patients treated during the year numbered 13,589 against 11,680 in 1923. The total number of attendances was 21,596 as against 20,148 in 1923.

2. The dispensary was open for 313 days. The daily average number of visits was 68.99 against 64.57 in 1923.

3. The institution continues to be well appreciated by the poorer classes, the increase is marked in the number of Malays attending.

4. The total number of intravenous injections given during the year were 889 for syphilis, 206 for yaws and 8 for gonorrhœa as compared to 494, 70 and 37 respectively in 1923.

Neo-salvarsan and N. A. B. were used for syphilis and yaws, and acriflavine for gonorrhœa.

5. The principal diseases treated as compared to the preceding year were as follows:—

	1923.	1924.
	—	—
Influenza ... ..	141	195
Dysentery Amoebic ... ..	66	160
Dysentery Bacillary ... ..	2	2
Malaria, unclassified ... ..	552	261
Malaria, Benign Tertian ... ..	174	202
Malaria, Subtertian ... ..	22	43
Malaria, Quartan ... ..	11	1
Malaria, Chronic ... ..	139	271
Venereal Diseases ... ..	950	1,686
Bronchitis ... ..	787	1,002
Ulcers ... ..	1,708	1,564
Injuries ... ..	610	829
Yaws ... ..	78	253

6. Assistant Surgeon S. MOHAMED BABOO was in charge from January to December 9th when he went on leave for one month. Assistant Surgeon KARUNARATNE was in charge during his absence.

## VENEREAL DISEASES.

				1923.	1924.
				—	—
Gonorrhœa	...	...	...	95	108
„	Rheumatism	...	...	—	96
„	Conjunctivitis	...	...	11	3
Chancre (soft)	...	...	...	55	59
Bubo	...	...	...	39	34
Syphilis, Adenitis	...	...	...	37	22
„	Periostitis	...	...	3	3
„	Orchitis	...	...	22	10
„	Epididymitis	...	...	9	16
„	Arthritis	...	...	36	—
„	Ulcers	...	...	63	92
„	Rheumatism	...	...	329	697
General Secondary Syphilis	...	...	...	144	312
„	Tertiary Syphilis	...	...	29	111
Primary Syphilis	...	...	...	78	76
Syphilitic Condyloma	...	...	...	—	6
Gonorrhœal Synovitis	...	...	...	—	41

## OUT-DOOR DISPENSARY, BALIK PULAU AND BAYAN LEPAS, PENANG.

The total number of persons who presented themselves for treatment during the year was 3,127 made up as follows:—

			<i>School Children.</i>	<i>Other Cases.</i>	<i>Total.</i>
			—	—	—
Balik Pulau	...	...	333	1,835	2,168
Bayan Lepas	...	...	401	558	959
			—	—	—
Total	...	...	734	2,393	3,127
			—	—	—

## OUT-DOOR DISPENSARY, BUTTERWORTH.

				<i>Patients treated.</i>	<i>Attendances and visits.</i>
				—	—
1.	1924	...	...	2,889	6,570
	1923	...	...	2,086	2,995
2.	Paying Patients	...	...	...	383
	Government Officers	...	...	...	728
	Indigent patients	...	...	...	1,778

Receipts for the year amounted \$194.02. A systematic treatment for Yaws was carried out throughout the year in this District and 868 injections of N. A. B. were given.

## 3. The principal diseases treated were:—

Dysentery—Amœbic	...	...	...	...	19
Gonorrhœa and Complications	...	...	...	...	34
Syphilis	...	...	...	...	82
Yaws	...	...	...	...	704
Malaria	...	...	...	...	370
Asthma	...	...	...	...	52
Bronchitis	...	...	...	...	179
Gastritis	...	...	...	...	60
Dyspepsia	...	...	...	...	81
Diarrhœa	...	...	...	...	42
Ascariasis	...	...	...	...	103
Scabies	...	...	...	...	40
Eczema	...	...	...	...	37
Ulcers	...	...	...	...	345

## 4. Nationalities of the patients treated:—

		1923.		1924.	
		Males.	Females.	Males.	Females.
Europeans	...	61	41	67	37
Eurasians	...	29	30	59	27
Chinese	...	322	61	406	71
Malays	...	685	142	904	210
Indians	...	541	170	832	275
Others	...	4	—	1	—
Total	...	1,642	444	2,269	620

## OUT-DOOR DISPENSARY, PENAGA.

		<i>Patients treated.</i>		<i>Attendances and visits.</i>
		—		—
1.	1924	...	1,358	1,788
	1923	...	1,068	1,536
2.	Paying patients	...	...	35
	Government Officers	...	...	541
	Indigent patients	...	...	782

The Dispensary was open twice a week and was managed by the Senior Dresser from Butterworth Hospital.

Two hundred and thirty-three injections of N. A. B. were given for cases of Yaws at the Dispensary.

## 3. Principal diseases treated were:—

Malaria	...	...	...	...	146
Bronchitis	...	...	...	...	33
Yaws	...	...	...	...	245
Syphilis	...	...	...	...	88
Rheumatism	...	...	...	...	45
Eczema	...	...	...	...	73
Ulcers	...	...	...	...	256
Scabies	...	...	...	...	116
Ascariasis	...	...	...	...	27

## 4. Nationalities of the patients treated:—

		1923.		1924.	
		Males.	Females.	Males.	Females.
		—	—	—	—
Europeans	...	4	—	1	—
Eurasians	...	17	6	12	6
Chinese	...	83	13	134	44
Malays	...	659	52	710	141
Indians	...	207	27	267	43
Others	...	—	—	—	—
Total	...	970	98	1,124	234

## OUT-DOOR DISPENSARY, BUKIT MERTAJAM.

Years.		Admitted.	Visits.	Total Receipts.
		—	—	—
				\$ c.
1924	...	4,611	6,748	255 19
1923	...	3,558	5,123	207 74
Showing increase	...	1,053	1,625	47 45

The nationalities of the Out-door patients treated as compared to those of 1923:—

		Males.		Females.	
		1924.	1923.	1924.	1923.
		—	—	—	—
Europeans	...	31	23	7	11
Eurasians	...	74	40	32	38
Chinese	...	1,146	681	411	265
Malays	...	1,516	1,524	152	177
Indians	...	1,027	523	172	110
Others	...	53	122	8	44

## INJECTIONS.

			1924.	1923.
			—	—
Injections for Yaws	...	...	987	591
Injections for Gonorrhœa	...	...	42	1
Injections for Syphilis	...	...	143	30

A weekly visit to the Kampongs using the Malay Vernacular Schools as centres for Yaws injections has been carried out this year; the ryots show an increasing appreciation of this treatment.

## OUT-DOOR DISPENSARIES, NEBONG TEBAL, SUNGEI BAKAP AND SIMPANG AMPAT.

1. *Nebong Tebal*.—Open daily (except Sundays and Public holidays) from 8 A.M. to 10 A.M. Total number of patients treated 1,290. Total number of visits 2,929.

2. *Sungei Bakap*.—Held at the hospital—cases are attended to by dresser on duty. Total number of patients treated 1,333. Total number of visits 1,780.

3. *Simpang Ampat*.—This dispensary was held on Wednesdays and Saturdays between 8 A.M. and 10 A.M.; but from the last week in November the arrangement was altered and it is now opened daily (except Sundays and holidays) from 2 P.M. to 4 P.M. Total number of patients treated 528. Total number of visits 1,070.

4. The Medical Officer in charge started a "Travelling Dispensary" in June using his motor car for the purpose, his object being to popularise anti yaws treatment amongst Malays. The dispensary visits distant kampongs and villages, where altogether 474 injections for yaws were given. This number together with 143 injections given at Sungei Bakap gives a total of 617 injections for yaws.

#### OUT-DOOR DISPENSARY, LUMUT.

Total number treated was 1,101 as against 864 of the previous year.

Total visits were 1,504 as against 1,218.

5. *Pengkalan Bharu*.—This Dispensary was opened in March, 1924. Total cases treated was 878.

Total visits 5,659.

Daily average visits was 16.4.

### III.—MALACCA.

#### GOVERNMENT OUT-DOOR DISPENSARY, CENTRAL DIVISION, MALACCA.

This was under the charge of Assistant Surgeon E. H. DE VRIES throughout the year. Six thousand two hundred and sixty-one cases were treated in the Dispensary as contrasted with 5,086 in 1923.

The following is the total of Nationalities:—

			Male.	Female.
			—	—
Europeans	...	...	110	47
Eurasians	...	...	1,103	952
Chinese	...	...	1,443	515
Malays	...	...	974	233
Indians	...	...	690	184
Others	...	...	10	—
			—	—
		Total	4,330	1,931
			—	—

#### OUT-DOOR DISPENSARY, DURIAN DAUN.

One thousand nine hundred and ninety-three patients attended the Dispensary during the year. The number of attendances and visits amounted to 2,563.

The daily average attendance was 7.00.

There were 105 cases of Malaria, 397 Syphilis, and 7 Yaws.

The total number of injections of organic arsenical compounds given to out-patients amounted to 429.

## OUT-DOOR DISPENSARY, JASIN.

Total number of cases treated ...	...	...	1,864
„ „ „ visits ...	...	...	2,929
„ „ „ Government Servants ...	...	...	168
„ „ „ Paying cases ...	...	...	47
„ „ „ Free cases ...	...	...	1,649
„ „ „ Males ...	...	...	1,370
„ „ „ Females ...	...	...	494

The Out-door Dispensary work at Merlimau was discontinued since 13th March, 1924, as the Travelling Dispensary started visiting the different kampongs at Merlimau. Till 13th March, 1924, three hundred and thirty-one cases were treated at Merlimau Out-door Dispensary and the number of visits was 399.

The number of out-patients treated in Jasin Hospital is less this year, as the Travelling Dispensary visits the different kampongs in Jasin District once a week and treats many cases in the kampongs.

## Intravenous Injections of Neo-Salvarsan:—

<i>Disease.</i>	<i>Number of cases treated.</i>	<i>Number of injections</i>	<i>Malays.</i>	
			<i>Male.</i>	<i>Female.</i>
—	—	—	—	—
Yaws ...	453	616	344	263
Syphilis ...	418	543	106	76

## ALOR GAJAH DISPENSARY.

Dresser MOHAMED NOOR bin BACHEE was in charge throughout the year.

In July the Dispensary was taken down and a temporary shed was built for use as a Dispensary. The new Alor Gajah Hospital is now under erection and will probably be completed in July, 1925. During the year 1924 the following received treatment in the Out-patient Dispensary:—

Males 2,312, Females 771, Malays 2,422, Chinese 518, Native of India 116, Europeans 6, Others 8 and Eurasians 22.

Number of injection for Yaws, Syphilis, etc., at Alor Gajah Dispensary during the year 1924:—

Yaws ...	...	...	...	1,101
Syphilis Secondary ...	...	...	...	78
„ Primary ...	...	...	...	8
Malaria ...	...	...	...	8
				<hr/> 1,195 <hr/>

## GOVERNMENT TRAVELLING DISPENSARY, MALACCA.

This was under the charge of Dresser MOHAMED DOM bin HAJI YAYAH from 17th March to 31st December, 1924.

Total cases treated ...	...	...	10,562
Total attendances ...	...	...	11,659

The following is the table of Nationalities:—

				Male.	Female.
Europeans	...	...	...	—	—
Eurasians	...	...	...	I	—
Chinese	...	...	...	1,249	148
Malays	...	...	...	5,868	3,011
Indians	...	...	...	255	29
Others	...	...	...	I	—
Total				7,374	3,188

The most prevailing diseases treated are:—

Beri-beri	...	...	1,306	Dyspepsia	...	...	23
Dysentery	...	...	4	Diarrhoea	...	...	57
Gonorrhœa	...	...	35	Constipation	...	...	785
Malaria	...	...	665	Colic, Intestinal	...	...	14
Rheumatism	...	...	305	Bubo Suppurating	...	...	6
Syphilis, Secondary	...	...	343	Nephritis	...	...	31
Yaws	...	...	2,950	Soft Chancre	...	...	6
Hemiplegia	...	...	I	Lumbago	...	...	132
Neuralgia	...	...	7	Abscess	...	...	8
Headache	...	...	125	Boil	...	...	8
Convulsion	...	...	2	Eczema	...	...	195
Conjunctivitis	...	...	245	Ulcer	...	...	929
Ulcer Cornea	...	...	I	Local Injuries	...	...	89
Otitis Media	...	...	4	Scabies	...	...	1,314
Arterio-sclerosis	...	...	I	Ringworm	...	...	237
Asthma	...	...	203	Roundworm	...	...	35
Bronchitis	...	...	443	Ankylostomiasis	...	...	20
Phthisis	...	...	I	General Injuries	...	...	I
Gastritis	...	...	31				

#### VENEREAL DISEASE CLINIC, MALACCA.

A Venereal Disease Clinic was opened in January and there were 2,249 attendances during the year. Propaganda has been carried out with a view to inducing patients to attend, persuading them to continue treatment till cured, and emphasising the dangers of spreading the disease. Prostitutes have been encouraged to attend the Clinic voluntarily on special days reserved for them and the response has been fairly satisfactory.

Disease.	Total No. of cases.	Total No. of injections N. A. B. Intravenous.	Total No. of Acriflavine Solution injection Intravenous.	Total No. of G. V. injections sub-cutaneous.	Total No. of Irrigations.	Remarks.
Congenital Syphilis	7	14	...	...	...	Neosalvarsan & N. A. B.
Primary	227	343	...	...	...	"
Secondary	734	1,131	...	...	...	"
Tertiary	112	201	...	...	...	"
Gonorrhœa	77	5	65	34	104	
Yaws	225	352	...	...	...	"
Total	1,382	2,046	65	34	104	Total attendances 2,249.

## IV.—LABUAN.

*Out-door Patients.*—One thousand four hundred and forty-eight cases were treated as Out-patients as against 1,243 in 1923. The nationalities were as follows:—

Sixty-seven Europeans; 18 Eurasians; 142 Chinese; 1,101 Malays; 84 Indians and 36 Others.

## APPENDIX "G".

## I.—SINGAPORE PRISON.

REPORT BY E. C. DOWNER, M.B.

1. The health of the prisoners and the sanitary condition of the prisons have been satisfactory.

2. The water carriage system of sewage disposal has worked satisfactorily during the year.

3. *Admissions to Prisons Hospital.*—There were nine hundred and eighty-eight (988) admissions, including six (6) Europeans and thirteen (13) Eurasians. This, with twenty-two (22) who remained from the previous year, gives a total treated of one thousand and ten (1,010).

The average daily sick was 31·24 as against 26·69 in the previous year.

4. The principal diseases treated were:—

Dysentery 31 (20 Amoebic and 11 Bacillary), Malaria 26, Venereal Diseases 177, Heart Disease 23, Bronchitis 60, Pulmonary Tuberculosis 23, Enteritis 23, Diarrhoea 64, Intestinal Parasites 45, Injuries 75 and Ulcers 28.

Most of the dysentery (14 amoebic and 8 bacillary) cases were relapses of the disease contracted prior to admission into Prisons.

5. *Deaths.*—There were thirty-one (31) deaths in Hospital, giving a death-rate of 3·06 per cent as compared with 37 deaths and 3·81 per cent in the previous year. Of the deaths, three (3) occurred within forty-eight (48) hours of admission excluding these, the death-rate was 2·77 per cent.

6. Causes of deaths were:—

Dysentery 12 (8 Amoebic and 4 Bacillary), Malaria 1, Pneumonia 1, Syphilis Secondary 1, New Growth Malignant 1, Heart Disease 2, Pulmonary Tuberculosis 3, Enteritis 5, Appendicitis 1, Rupture of Spleen 1, Bright's Disease 2 and Ankylostomiasis 1.

7. No deaths occurred in the cells of the prisons.

8. Suicide by Hanging—Nil.

9. Twenty-six (26) cases, including two (2) Females and two (2) Eurasians, were transferred to the General Hospital for major operations. Of these two (2) died, both from general peritonitis.

10. Fifty (50) vagrants suffering from serious complaints were transferred to Tan Tock Seng Hospital for treatment.

11. *Executions.*—There were six (6):—

Four (4) Chinese and two (2) Indians.

12. Seven (7) criminals and four (4) vagrants were transferred to the Lunatic Asylum.

13. Eight (8) prisoners were transferred to the Leper Asylum.

14. The figures for the different classes of prisoners are shown from the following tables:—

	<i>Criminal.</i>	<i>Civil.</i>	<i>Vagrant.</i>
	—	—	—
A. Total Population in Prison ...	3,901	4,505	816
B. Average daily number in Prison	1,043	146	53
C. Total treated in Hospital ...	902	53	55
D. Percentage of C to A ...	23·12	1·17	6·74
E. Total Deaths ...	35	3	1

16. *Staff.*—Dr. A. L. MURISON, Medical Officer in charge, left for Europe at the beginning of August and Dr. H. W. FURNIVALL relieved him.

## II.—PENANG PRISON.

REPORT BY W. A. TAYLOR, M.B., CH.B., *Chief Medical Officer, Penang.*

1. The sanitary condition of the Prison and the health of the prisoners were satisfactory.

2.—(a) Eighteen patients remained in hospital at the beginning of 1924 and 242 cases were admitted during the year—making a total of 260 cases treated as compared with 297 in 1923.

(b) The daily average of sick for the year was 16·59 as compared with 14·03 of the previous year.

(c) Seventeen deaths occurred during the year, a death-rate of 6·53 per cent, of those treated, as compared with 18 deaths and a death-rate of 6·06 of previous year.

(d) Sixty vagrants were admitted to hospital during the year—13 deaths occurred among vagrants.

(e) Of the total number of prisoners and vagrants admitted to the Prison and House of Detention 1,146 were criminals and 177 vagrants.

(f) The principal diseases treated in the Prison Hospital were:—

Malarial Fever	...	...	...	23
Pul. Tuberculosis	...	...	...	8
Valv. Disease of Heart	...	...	...	10
Ankylostomiasis	...	...	...	14
Skin Disease	...	...	...	23
Bronchitis	...	...	...	15
Syphilis	...	...	...	25
Injuries	...	...	...	17

## III.—MALACCA PRISON.

Four cases remained at the end of December, 1924, and there were 81 admissions during the year.

Chief diseases were:—

Dysentery, Diarrhoea, Bronchitis, Ankylostomiasis and Ulcer.

## APPENDIX "H".

## TREATMENT OF LEPROSY AT PULAU JEREJAK.

## REPORT FOR 1924.

By A. H. WHEATLEY, *Deputy Medical Officer.*

(A).—(a) Cases remaining under treatment at end of 1923 ...	416
(b) New cases seeking treatment ...	112
(c) Total treated during the year ...	528

(B).—*The Drugs used have been.*—

- (a) *E. C. C. O.*—The ethyl esters of the Hydnocarpus Wightiana, with camphor, creasote and olive oil, given intramuscularly. Dosage. 0.25 C. C. increased by 0.25 C. C. at each subsequent injection, given twice weekly till a reaction is produced. Then treatment is suspended for a short time, till reaction passes, and it is commenced again with the last smaller dose which was tolerated. Increase in dosage must be regulated by the amount of reaction produced: it is wise to try and avoid severe reactions.

The average maximum dose was 4 C. Cs. given once weekly. Nodular leprous patches were also infiltrated with the drug and this helps to clear the patches. The method of infiltration advocated by Dr. E. Muir was used, *vis.*—A leprous patch is selected and infiltrated from its two poles. A needle  $1\frac{1}{4}$  inches long is inserted to its full length at one pole of the patch and  $\frac{1}{8}$  of the drug is injected. The needle is then withdrawn till its point is just still inside the skin and it is then re-inserted at the different angle. This is again twice repeated so that four injections have been made in four different directions with only one puncture of the skin. The same is then done at the other pole of the patch. It is injected in doses gradually rising to 4 C. Cs.

The intravenous use of this drug has just been abandoned. At the time of writing the pure oil of Hydnocarpus Wightiana, expressed from the bean is being mainly used for infiltration treatment.

Nasal spraying with *E. C. C. O.* once daily was also given to many cases. It is well liked by the patients, who say it relieves their headaches.

Total number of cases treated was	...	...	16
Not improved	...	...	3
Improved	...	...	11
Much Improved	...	...	2

- (b) *E. C. C. O.* with the addition of 5 per cent Thymol was also given in the same dosage as *E. C. C. O.* intramuscularly, with the same precautions to reactions.

The number of cases treated was	...	...	69
Not improved	...	...	46
Improved	...	...	19
Much improved	...	...	3
Lesions disappeared	...	...	1

The average maximum dose was 4 C. Cs.

Nasal spraying with *E. C. C. O.* only was also given daily. Infiltration with *E. C. C. O.* alone was also given to the nodular cases.

- (c) *Sodium Hydnocarpate et Soyatee of each 3 per cent solution*.—These are the sodium salts of the most active unsaturated fatty acids of Hydnocarpus and of Soya bean oil.

Commencing dose 0.5 C. C. intravenously twice weekly, increased at each injection by 0.5 C. C., as long as mild reactions are produced. The average maximum dose was 4 C. Cs.

Total number of cases treated ...	...	...	7
Not improved ...	...	...	6
Much improved ...	...	...	1
			7

Nasal sprays of E. C. C. O. were given to all these cases daily.

- (d) *Sodium morrhuate 3 per cent solution*.—This is the sodium salt from Cod-Liver oil. The dosage and method of injection are the same as for Sodium Hydnocarpate et Soyate. The reactions are not severe with this drug, and it is well tolerated by all cases. The average maximum dose was 5 C. Cs. This is a useful drug.

Total number of cases treated ...	...	...	94
Not improved ...	...	...	43
Improved ...	...	...	39
Much improved ...	...	...	11
Lesions disappeared ...	...	...	1
			94

All cases also received *inunction* with Ol Chaulmoogra daily.

- (e) *Ten per cent and 20 per cent Thymol with Ol Morrhuae*.—Advocated by Dr. HAMZA of Medan was discontinued as the injections were very painful, and patients refused to continue with the treatment.

- (f) (a) *Moogrol*.—A mixture of the esters of the acids of the Chaulmoogric series.

Dosages. Intramuscularly 0.5 C. C. twice weekly increased at each injection by 0.5 C. C., as long as moderate reactions are produced. The average maximum dose was 4 C. Cs.

Total number of cases treated ...	...	...	15
Not improved ...	...	...	10
Improved ...	...	...	4
Much improved ...	...	...	1
			15

- (b) *Moogrol*.—Intravenously has been tried since September, 1924. It is well tolerated, the reactions are mild. The dosage is 0.25 C. C. twice weekly increased by 0.25 C. C. at each injection, till 1½ C. C. is reached when it is given once weekly and increased by 0.25 C. C. till a maximum of 2 C. C. is reached. At 1 C. C. in all cases there was moderate reaction.

Total number of cases treated ...	...	...	5
Not improved ...	...	...	2
Improved ...	...	...	2
Much improved ...	...	...	1
			5

- (c) *Five per cent Thymol with Moogrol*.—Given intramuscularly. The dose is 0.5 C. C. twice weekly and increased by 0.5 C. C. at each subsequent injection with due regard to reactions to a maximum dose of 4 C. Cs. When it is given once weekly.

Total number of cases treated ...	...	...	57
Not improved ...	...	...	30
Improved ...	...	...	21
Much improved ...	...	...	6
			57

- (g) *Five per cent Thymol with antileprol*.—A mixture of the esters of the acids of the chaulmoogric series. Dr. HAMZA of Medan recommended this as being less painful than Thymol with cod liver oil, well tolerated, and curative. Seventeen were treated at this Asylum, for a period of 9 months. It is given intramuscularly in the usual dosage commencing with 0.5 C. C. and increasing by 0.5 C. C. With due regard to reactions, to a maximum dose of 4 C. Cs. It appears to be a very useful drug.

Total number of cases treated ...	...	...	...	17
Not improved ...	...	...	...	8
Improved ...	...	...	...	5
Much improved ...	...	...	...	3
Lesions disappeared ...	...	...	...	1

- (h) *Ethyl Chaulmoograte*.—prepared by the British Drug Houses, Limited—the ethyl esters of the acids of the chaulmoogric series. It is given intravenously, with a commencing dose of 0.5 C. C. twice weekly increased by 0.5 C. C. at each injection, as long as moderate reactions are produced, to a maximum dose of 4 C. Cs. given once weekly.

Total number of cases treated ...	...	...	...	8
Not improved ...	...	...	...	3
Improved ...	...	...	...	5

- (i) *Antimonium Tartrate 2 per cent solution*.—Was given intravenously to 21 severe ulcerative cases with improvement in the ulcerative condition in all the cases: commencing dose 1 C. C. twice weekly, increased by 1 C. C. at each injection to a maximum dose of 4 C. C. given once weekly. When the ulcers began to get healthy, these cases were put on to treatment for their leprous condition.

- (j) *Tai Fong Chce*.—The Chinese name for the *Hydnocarpus Anthelmintica* nut. Hemp seed was added, according to the formula of Dr. TRAVERS in Kuala Lumpur.

Hydnocarpus Seeds ...	...	...	...	2 parts.
Hemp. Seed ...	...	...	...	1 part.

Well pulverised and mixed—

Dose for adults ...	...	Grs. xxx twice daily.
„ for boys ...	...	In proportion.

The drug is popular with the Chinese inmates. It has been in use here for 10 years, by the inmates themselves. It does ameliorate the leprous condition to some extent. Twenty three cases have been under treatment during the year with the following results.

Not improved ...	...	...	...	6
Improved ...	...	...	...	16
Much improved ...	...	...	...	1

On November 1st, 1924, 196 cases were put on this line of treatment.

### ILLUSTRATIVE CASES.

#### I. UNG BOK.—Hokkien.

44 yeas.

Duration of disease 1 year.

Date of admission, 10th January, 1924.

*Condition on admission*.—Very debilitated and emaciated. Both ears thickened and enlarged. There were raised leprous patches on right cheek and right upper arm near elbow. Both ulna nerves were thickened and there was loss of sensation in the fingers. Nasal smears contained many *Lepa Bacilli*.

*The treatment given was.*—Thirty-six injections 3 per cent Sodium Morrhuate intravenously.

Maximum dose 5 C. Cs.

Minimum dose 0.5 C. Cs.

The leprous lesions diminished but after 4 months of this drug a stationary state set in 5 per cent Thymol with E. C. C. O. was then given intramuscularly in the dosage described the maximum dose given was 4 C. Cs. The lesions began to gradually diminish and there was steady improvement till all lesions disappeared. He received 48 injections of this latter drug.

Internally. Sodium Morrhuate grs. 3 thrice daily increasing by grs. 3 daily was given till 21 grains per diem was being taken. Daily inunctions with Ol. Chaulmoogra and nasal spraying with pure E. C. C. O. thrice weekly were also given.

*Condition on 31st December, 1924.*—Strong and healthy. Free from all signs of leprosy. No lepra bacilli found in smears on six different examinations. He is working as a cook at the Main Asylum.

## II. CHOO KOOL.—Cantonese.

39 years.

Duration of disease 1 year.

Date of admission 5th May, 1924.

*Condition on admission.*—Thickened leprous patches on forehead with thickening and enlargement of ears. Ulcers on feet, ulna nerves thickened, some loss of sensation in fingers—Numerous lepra bacilli in nasal smears.

*Treatment given was.*—Eighty-four injections of 3 per cent Solution Sodium Morrhuate intravenously. Minimum dose 0.5 C. C. Maximum dose 5 C. Cs. Inunctions daily with Ol. Chaulmoogra.

Sodium Morrhuate grs. 3 thrice daily, increased by grs. 3 daily till 21 grs. thrice daily was taken.

Nasal spraying with E. C. C. O. thrice weekly.

Open air work (vegetable planting) was energetically carried on.

*Condition on 31st December, 1924.*—Free from all clinical signs of leprosy. Nasal smears still show lepra bacilli, granular looking bacilli indicative that certain parts are not retaining their acid fastness: this is a favourable sign.

## III. CHONG CHIN.—Teochew.

45 years.

Duration of disease. 2 years.

Date of admission 19th January, 1924.

*Condition on admission.*—Very emaciated, ears very thickened. Skin of forehead slightly thickened. Faint roseolar patches on chest and back. Ulna nerves slightly thickened. No loss of sensation. Nasal smears showed numerous lepra bacilli.

*Treatment given was.*—Sixteen injections 3 per cent Sodium Morrhuate intravenously.

Maximum dose 5 C. Cs. There was no improvement.

Nineteen injections 5 per cent Thymol with E. C. C. O. intramuscularly was then given. Maximum dose 4 C. Cs. but there was no improvement, and not even a reaction.

Five per cent Thymol with Antileprol was then tried. A reaction for the first time occurred at the 6th injection of 2 C. Cs. He received 28 injections of this, the lesions began to fade gradually, till they disappeared.

Moogrol intravenously was then commenced. Has had 19 injections of this. Bacteriologically, lepra bacilli are still present, granular and diphtheroid looking bacilli, fewer in number and this is a favourable indication.

*Condition on 31st December, 1924.*—Free from all clinical signs of leprosy. Much stronger and stouter. Has asked to be sent to his parents and children in Swatow. It is hoped to repatriate him when lepra bacilli disappears.

THE FOLLOWING ARE SOME OF THE CASES SHOWING DECIDED IMPROVEMENT.

#### IV. RAMALINGUM.—

Tamil.

23 years.

Duration of disease. One year and 3 months.

Date of admission 12th November, 1923.

*Condition on admission.*—Raised leprous patches on forehead. Ears thickened and ulcerated. Ulnar nerves tender and enlarged. Some numbness of fingers. Nasal smears show numerous lepra bacilli.

*Treatment given was.*—

In 1923. Five per cent Thymol with Moogrol intramuscularly.

Eleven injections. Maximum dose 3 C. Cs.

In 1924. Five per cent Thymol with Moogrol intramuscularly.

Twenty-six injections. Maximum dose 4 C. Cs.

There was slight improvement. Ulcer ears healed and the patch on forehead was decreased.

Five per cent Thymol with Antileprol was then tried—16 injections were given.

Five per cent Thymol with Moogrol was then restarted.

Twenty injections.

*Condition on 31st December, 1924.*—Thickened patches on forehead have disappeared. Right ear still some thickening, left is normal.

Ulnar nerves are still enlarged, but not tender.

Lepra bacilli still present in smears.

#### V. EBERT.—

Eurasian.

22 years.

Duration of disease 2 years.

Date of admission 30th January, 1923.

*Condition on admission.*—Both ears very thickened, tubercles on forehead, lips, chin, and nostrils. Areas of raised roseolar patches on left cheek. Loss of sensation hands and feet. Numerous lepra bacilli in smears.

*Treatment given.*—

1923.—(a) Three per cent Sodium Hydnocarpate et Soyate intravenously 32 injections

(b) Three per cent Sodium Morrhuate intravenously ... 40 injections.

(c) E. C. C. O. intramuscularly ... .. 16 „

(d) Ten per cent Thymol et Ol. Morrhuae ... 9 „

(e) Twenty per cent Thymol et Ol. Morrhuae ... 19 „

1924.—(a) E. C. C. O. by infiltration into patches and tubercles 26 injections.

Maximum amount injected 3 C. Cs.

(b) Five per cent Thymol et Antileprol 16 intramuscularly injections.

Maximum dose 3 C. Cs.

(c) Three per cent Sodium Morrhuate intravenously of which 43 injections have been given, with a Maximum dose of 5 C. Cs.

*Condition on 31st December, 1924.*—Tubercles on face have disappeared. Raised patches on left cheek have disappeared leaving some scarring behind from infiltration treatment. Ears greatly reduced, but still not quite normal. Smears show lepra bacilli still, with some granular looking bacilli scattered about in smear, which is a favourable sign. There were daily inunctions of Chaulmoogra Oil: exercise with dumb bells and rowing was also taken and improved his muscular condition greatly.

#### VI. SANASEE.—

Tamil.

39 years.

Duration of disease 2 years.

Date of admission 17th August, 1922.

*Condition on admission.*—Both ears very thickened. Leprous nodule under right lower lid. Raised thickened patches on cheeks. Large raised thickened areas on forehead, almost like small tumours. Lepra bacilli present in smears.

#### *Treatment given.*—

1922.—E. C. C. O. intramuscularly	...	...	19 injections.
E. C. C. O. infiltration	...	...	17 „
1923.—E. C. C. O. intramuscularly	...	...	46 „
E. C. C. O. infiltration	...	...	37 „
1924.—Five per cent Thymol et E. C. C. O intramuscularly	...	...	21 „
E. C. C. O. by infiltration	...	...	26 „

*Condition on 31st December, 1924.*—Ears greatly decreased. Leprous nodule under lower lid disappeared. No thickening of skin of forehead, only light coloured patches of skin remaining. Smears still show lepra bacilli.

#### VII. NG AH SENG.—

Cantonese.

35 years.

Duration of disease 2 years.

Date of admission 30th March, 1924.

*Condition on admission.*—Skin of forehead thickened. Raised leprous patches on cheeks, extending to malar bones. Both ears thickened and ulcerated. Large discoloured patches on abdominal wall. Lepra bacilli present in smears.

#### *Treatment given.*—

1924.—Bismuth Tartrate intramuscularly	...	...	4 injections.
Five per cent Thymol et Moogrol intramuscularly	...	...	59 „

*Condition on 31st December, 1924.*—Thickening of forehead decreased greatly. Leprous patches on cheeks almost disappeared. Ears only slightly thickened. Patches on abdominal wall disappeared.

## VII. MOK NAM.—

Cantonese.

32 years.

Duration of disease 7 years.

Date of admission 6th January, 1920.

*Commenced treatment in 1923 after much inducement.*—Said he had tried various remedies including Chaulmoogra Oil.

Condition on commencing treatment. Both ears thickened. Thickened condition of skin of forehead. Ulnar nerves thickened with loss of sensation in fingers. There was also some anæsthesia of right buttock. Smears showed lepra bacilli.

*Treatment given.*—

1923.—Moogrol intramuscularly	...	...	17 injections.
E. C. C. O. intramuscularly	...	...	22 „
Sodium Morrhuate 3 per cent intravenously	...	32	„
Twenty per cent Ichthyl et Ol. Morrhue intramuscularly	...	...	17 „
1924.—do.	...	...	2 „
Three per cent Sodium Morrhuate intravenously		16	„
Five per cent Thymol et E. C. C. O. intramuscularly	...	...	21 „
Moogrol intravenously	...	...	16 „

*Condition on 31st December, 1924.*—Ears almost normal, thickening of skin of face reduced greatly, sensation has returned to fingers and buttocks. Nasal smears show lepra bacilli still.

## IX. TONG TUCK.—

Cantonese.

24 years.

Duration of disease 3 years.

Date of admission 7th April, 1923.

*Condition on admission.*—Skin of forehead and cheeks thickened. Ears enlarged and thickened. Faint leprous patches on back. Loss of sensation, hands up to wrists. Smears showed lepra bacilli.

*Treatment given.*—

1923.—Moogrol et 5 per cent Thymol intramuscularly	19 injections.
1924.—do.	... 16 „
Sodium Morrhuate 3 per cent intravenously	... 19 „
Antileprol et 5 per cent Thymol intramuscularly	16 „
Moogrol intravenously	... 7 „

*Condition on 31st December, 1924.*—Ears reduced greatly. Skin of forehead and face almost normal. Sensation has returned. Lepra bacilli still present in smears.

PHOTOGRAPH NOT REPRODUCED.

I. UNG BOK.

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

II. CHOO KOOL.

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

**III. CHONG CHIN.**

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

IV. RAMALINGUM.

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

V. EBERT.  
*January, 1923.*

V. EBERT.

PHOTOGRAPH NOT REPRODUCED.

*December, 1923.*

PHOTOGRAPH NOT REPRODUCED.

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

VI. SANASEE.

1922.

PHOTOGRAPH NOT REPRODUCED.

SANASEE.

1924.

PHOTOGRAPH NOT REPRODUCED.

VII. NG AN SENG.

*December, 1924.*

PHOTOGRAPH NOT REPRODUCED.

VIII. MOK NAM.

1924.

PHOTOGRAPH NOT REPRODUCED.

**IX. TONG TUCK.**

*December, 1924.*

## APPENDIX "I".

NOTE ON TRANSACTIONS OF THE FIFTH CONGRESS OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE HELD IN SINGAPORE, SEPTEMBER, 1923.

1. The Transactions of the Fifth Congress of the Far Eastern Association of Tropical Medicine, edited by Dr. A. L. HOOPS, President of the Congress, and Dr. J. W. SCHARFF, Honorary Secretary, were published in August, 1925.

The volume contains nearly 1,000 pages and is well illustrated.

It opens with the address of Welcome by His Excellency the Governor of the Straits Settlements and High Commissioner for Malaya, and the Presidential address on The Prevention of Disease in the Tropics.

The papers which are well illustrated, are arranged under the following headings—Malaria 14, Beri-beri 7, Ankylostomiasis 6, Leprosy 6, Plague 4, Miscellaneous 35.

There are notes of the discussion on each paper.

An account is also given of the excursion to the Federated Malay States and Penang, which took place during the second week of the Congress, when visits were paid to various places of medical and scientific interest.

There is a record of the General Business Meeting and the Council and Committee Meetings of the Association.

2. Mention must be made of four important resolutions passed by the Congress.

## I. CONTROL OF BERI-BERI.

The General Meeting unanimously approved the recommendations of the Council relating to the control of beri-beri, which were as follows:—

(1) "The Fifth Congress of the Far Eastern Association of Tropical Medicine has considered the proposal of the Philippine Islands delegation for international action in the control of beri-beri and has taken note of the views of the official delegates of the Governments represented in the Fifth Congress. The Association is of opinion that, consequent upon the divergence of views disclosed in the statements of the official delegates, any international convention is at present impracticable.

(2) The Association re-affirms its belief that beri-beri is a disorder of nutrition and that in the Far East the principal factor in its causation is a diet of which overmilled rice forms the staple.

(3) The Association recommends that individual Governments be invited to promote further research into the following questions in relation to beri-beri control:—

(a) The standardisation of rice.

(b) The effects of transport and storage on rice.

(c) Economic considerations.

(4) The Association recommends that each of the Governments interested, and the Rockefeller Foundation, be invited to nominate a representative to a Committee for beri-beri, which shall report at the next Congress.

(5) The Association considers that in the meantime individual Governments should take such action for the control of beri-beri as may be suited to local conditions in their respective countries, and should devote special attention to devising and applying practical methods of improving the diet of the general population, with regard to the too exclusive use of overmilled rice, and be requested to make available to the next Congress of the Far Eastern Association of Tropical Medicine systematic observations and statistical data showing the results of these methods.

(6) The Association considers that educational methods of control on the basis of the available scientific knowledge should be vigorously applied in all countries."

In accordance with this resolution each of the Governments interested, and the Rockefeller Foundation, appointed a representative on a Beri-beri Committee, the members of which have been exchanging views, and in some instances working on the problem.

The Committee will meet at Tokyo and will report to the next Congress there.

## II. MEASUREMENT OF THE ENLARGED SPLEEN IN CHILDREN.

The general meeting adopted the following "Resolution regarding the measurement of the size of the enlarged spleen in children" put forward by a Committee whose names are given below:

1. Since the last meeting of the Congress, investigation has shown that the difficulty due to varying size of children can be met by the use of a correction table based on anthropometric data. Such a table can be constructed with regard to:—

(a) sitting height;

(b) the line suggested by Dr. KUNO (from upper edge of inner extremity of clavicle to iliac spine of opposite side).

2. The costal margin as a base for measurement of the spleen has been shown to be unreliable and misleading.

3. For careful scientific observation, actual trial has shown that the size and position of the spleen is (up to the present) best indicated by a measurement from the apex of the spleen to the umbilicus, and one from the same point to the midline of the body, which fixes the position of the apex of the spleen in relation to the abdomen as a whole. It is recognised that the umbilicus is not an absolutely fixed point, but it has nevertheless been selected, because actual observation has shown that in children it is less liable than any other point to give misleading results. It is desirable that the value of this method, and the best way of applying it to practical use, should be further investigated.

4. For routine work the Committee do not think it advisable as yet to lay down rules.

5. It is suggested that the present Committee remain in being with the object of making a further report to the Association at its next meeting.

Signed by,

Dr. KIEWIET DE JONGE.

Dr. HACKER.

Lieut.-Col. CHRISTOPHERS.

Dr. J. VAN LONKHUIJZEN.

Dr. MALCOLM WATSON.

Dr. WELLINGTON.

Dr. TSURUMI.

## III. RECOMMENDATIONS ON THE MATTER OF QUARANTINE PROCEDURE IN THE FAR EAST.

"The Fifth Congress of the Far Eastern Association of Tropical Medicine resolved that:—

(a) The regulations of the International Convention of Paris, 1912, are not suitable for the proper carrying out of quarantine measures in the Far East.

(b) The revisions so far proposed by L'Office Internationale d'Hygiene and the Office of Hygiene of the League of Nations do not alter this unsuitability.

(c) That circumstances in the Far East demand a quite different quarantine procedure from that in Europe.

It is therefore desirable that a separate agreement should be drawn up to govern quarantine regulations in the Far East, to allow of the necessary co-operation between the different Far Eastern countries.

It is also agreed that a copy of this resolution be sent to all Governments of the Far East, and to the Office of the Health Committee of the League of Nations at Geneva, and L'Office Internationale d'Hygiene at Paris."

An International Conference at which each nation in the Far East was represented by one delegate has since been held in Singapore under the Presidency of Dr. NORMAN WHITE, C.I.E., of the League of Nations Health Committee. The revision of the International Sanitary Convention, Paris, was discussed at this meeting: it is expected that a section applicable to the Far East will be included in the revised Convention.

#### IV. RESOLUTION FORWARDED TO THE HEALTH COMMITTEE OF THE LEAGUE OF NATIONS.

The Far Eastern Association of Tropical Medicine requests the Health Committee of the League of Nations:—

(a) To arrange for the temporary interchange of sanitary personnel in countries of the Far East.

(b) In this connection to provide for a course of instruction for Health Officers to be given in Tokyo following the meeting of the Sixth Congress.

In response the League of Nations has arranged for a six weeks' tour of Japan and Korea for the observation of Health Organisation and Activities in those two countries, to commence at the conclusion of the Sixth Congress meeting in Tokyo. The various nations taking part in the Congress have on the invitation of the League of Nations Health Committee, appointed representatives to go on this tour. The Malayan nominees are Dr. A. L. HOOPS and Dr. A. R. WELLINGTON.

3. During the Fifth Congress that Great National Calamity, the Japanese Earthquake occurred.

In addition to passing a vote of sympathy, the members of the Congress subscribed a sum of \$4,330 which was handed to the Japanese Vice-President of the Congress for disposal on relief work.

4. The Sixth Congress of the Far Eastern Association of Tropical Medicine is to be held in Tokyo during October, 1925, under the Presidency of Baron Kitasato.

The official delegates appointed to represent Malaya at this Congress are:—

Dr. A. L. HOOPS ( <i>Vice-President of the Congress.</i> )	}	<i>Straits Settlements.</i>
Dr. J. S. WEBSTER.		
Dr. A. R. WELLINGTON.	}	<i>Federated Malay States.</i>
Dr. W. FLETCHER.		

## APPENDIX "J".

## LUNATIC ASYLUM, SINGAPORE.

Report by E. R. STONE, M.B., B.CH., Medical Superintendent.

1. There remained on 31st December, 1923, four hundred and forty-eight males and sixty-three females.

Two hundred and ninety-eight males and seventy-two females were admitted.

The total treated was eight hundred and eighty-one.

2. Of the admissions twenty-six males and eight females had previously been under treatment in this Asylum.

3. Of the total treated one hundred and sixteen males and eighteen females were discharged as recovered: eighteen males and five females as relieved: six males and one female as not improved: eleven males and one female absconded and ninety-eight males and thirteen females died. One male was discharged as not insane on admission.

4. Of the six males and one female shown as discharged not improved, one male was handed over to an escort for passage to Europe, and the remainder were handed over to the care of friends.

5. There remained on the 31st December, 1924, four hundred and ninety-six males and ninety-seven females.

6. The average daily numbers were 483.56 males and 79.07 females.

7. The maximum and minimum daily numbers were respectively six hundred and four and five hundred and nine.

8. The nationalities of the admissions were:—

				<i>Males.</i>	<i>Females.</i>
				—	—
British	...	...	...	6	1
Other Europeans	...	...	...	1	0
Eurasians	...	...	...	1	2
Chinese	...	...	...	196	52
Tamils	...	...	...	54	8
Malays and Allied Races	...	...	...	23	6
Others	...	...	...	17	3
				298	72

9. The physical condition of those admitted were:—

				<i>Males.</i>	<i>Females.</i>
				—	—
Good	...	...	...	107	31
Fair	...	...	...	88	24
Impaired	...	...	...	75	14
Greatly impaired	...	...	...	28	3

10. Twenty-three patients died within a month of their admissions.

11. Alcohol, Malaria, and prolonged mental stress due in several instances to privation appeared in many cases as the causes of mental disorder.

Syphilis was a direct cause in 10 per cent of the admissions, and predisposition to insanity from a previous attack was present also in about 10 per cent of the admissions. A history of insane heredity was obtained in a few cases.

12. The recovery rate for the year was 36.31 per cent.

13. Criminal population—There remained on the 31st December, 1923, thirty-four lunatic criminals and nineteen criminal lunatics. There were admitted during the year eighteen of the former class and two of the latter class.

Of the seventy-three criminals treated the sentence of seven expired, seven recovered and were returned to Prison and six died.

There remained on 31st December, 1924, thirty-four lunatic criminals and nineteen criminal lunatics, of these six were females.

*Deaths.*—The death rate based on the average daily number resident was 19.72 per cent; on the total treated it was 12.59 per cent. The chief causes of mortality were general paralysis of the insane, tuberculosis, and bacillary dysentery; the first named disease claimed 25.2 per cent of the total deaths.

*Industries.*—Nine thousand nine hundred and eighty-four yards of cotton were woven by the male patients from which clothing and bedding was made for the Asylum inmates. From canvas purchased from the Crown Agents sixty-five strong rugs and thirty-seven combination suits were made.

*Revenue.*—The revenue received from paying patients amounted to \$14,545.94. The garden furnished 20,979 lbs. of vegetables, 145 bunches of bananas and also some soursops and sugar cane, the total value of which was \$576.

## APPENDIX "K".

### GOVERNMENT ANALYST'S DEPARTMENT.

#### I.—SINGAPORE.

REPORT BY MR. J. C. COWAP, B.SC., F.I.C., *Government Analyst, S. S.*

The following table shows the Revenue and Expenditure for the year 1924 and, for comparison, the Revenue collected during the preceding year:—

#### *Fees of Office.*

<i>Revenue.</i>	1923.	1924.	<i>Expenditure.</i>	1924.
	\$ c.	\$ c.		\$ c.
Petroleum in- spection ...	3,390 00	3,825 00	Personal Emoluments ...	25,128 16
Miscellaneous	7,918 50	9,403 50	Stores from England ...	964 50
			Miscellaneous ...	769 04
			Transport ...	277 39
Total ...	11,308 50	13,228 50		
			Total ...	27,139 09
By Sale of Pyridine ...	2,585 60	2,547 10		

#### PETROLEUM.

One hundred and sixty-eight Flash-point tests were made on consignments of kerosene imported into the Settlement, and on 10 consignments for transshipment. The total quantities of kerosene thus imported were:—

East Indian Oil Imported	...	472,636 Tins.
American Oil Imported	...	165,801 „
		<hr/> 638,437 „

## OTHER PETROLEUM.

Two other samples of kerosene were sent in for special tests. 85 samples of liquid fuel were examined—of these 29 were received from local companies for special tests and 56 from the Admiralty for specification analysis.

Six other samples of petroleum were sent in for complete analysis.

## TESTING OF TANK STEAMERS.

Sixty-five vessels which had carried petroleum were tested for inflammable vapour before being allowed to enter the Harbour Limits or to enter the Docks.

## EXPLOSIVES.

Six consignments of Explosives were tested on importation to Singapore under Ordinance No. 136 (Arms and Explosives).

All passed the prescribed tests.

Details of these are given in the following table.

NO. OF PACKAGES OF 50 LBS. EACH.					
<i>No. of Con- signment.</i>	<i>Dynamite.</i>	<i>Gelignite.</i>	<i>Blasting Gelatine.</i>	<i>Nitro Cellulose.</i>	<i>Total.</i>
—	—	—	—	—	—
6	800	1,800	1,700	66	4,366

In addition one 10 lbs. Keg of gunpowder, three hundred and fifty 10 lb. Kegs of blasting powder, eight 10 lb. Kegs of sporting powder, eighty-three cases of detonators, and one case of friction tubes were imported.

Thirty-three unexploded bombs and two packages of explosives were received from the Police and reported upon in connection with various criminal cases.

## MONOPOLIES DEPARTMENT.

*(a) Ordinance No. 117 (Chandu Revenue).*

Exhibits in 165 cases instituted under this Ordinance were examined and certificates issued.

Opium and Chandu seized by the Preventive Service were regularly assayed for value, one hundred and twenty-one samples of these seizures were received.

The number of check samples taken from the Opium Factory and assayed was 66.

Five thousand and twenty-one packets of chandu dross weighing 21,746 tahils were weighed and valued on purchase by the Monopolies Department from the Keepers of Smoking Shops.

Eleven special samples of chandu and opium were analysed.

*(b) Ordinance No. 118 (Liquors Revenue).*

The spirit strengths of 3,515 samples of liquors from Singapore and 80 from Malacca were determined for the assessment of duty.

Analyses of 41 samples of Brandy were made in order to discover their correct classifications for duty purposes.

Twenty-six samples of Toddy, 13 of Samsoo, 15 of Arrack, 3 of Rum, 3 of Wine and 1 Whisky were examined for various purposes of the Monopolies Department or the Police.

Twenty-four sets of exhibits comprising 67 samples of illicit liquor were reported upon.

*(c) Methylated Spirits.*

Thirty-four consignments of arrack were methylated for industrial purposes. The total volume of spirit so methylated was 99,570 gallons.

## COUNTERFEIT COINS, ETC.

Twelve sets of exhibits in coining cases were received from Singapore, 3 from Johore and 1 from Malacca. They included 2,061 counterfeit coins, the majority of which were 10-cent pieces, and several complete or partly complete outfits for their manufacture.

Two cases of alleged forgery of currency notes were investigated, in one of these the accused person had a remarkable collection of apparatus for printing and dyeing the notes—His products except by careful examination were difficult to detect as forgeries.

## TOXICOLOGY.

Thirty-seven specimens of Viscera, Stomach Contents, Stomach Washings, etc. were received for examination—of these 1 case from Trengganu, 4 from Johore, 4 from Malacca and the rest from Singapore.

Opium was detected in 10 cases, atropine in 2 cases, veronal in 3 cases, Methyl Salicylate in 2 cases, and in 1 case each was found Tuba Root, Formalin, a mixture of iodoform and kerosene, carbolic acid, and aluminium chloride.

In addition to the above the stomach of a cat suspected to be poisoned by arsenic was found to be free from poison and the stomach of a dog contained ptomaine.

Thirty-one other specimens of substances suspected to be poisonous were received for examination from the Medical Department or the Police. The presence of tuba root was established in two of these, of veronal in one, of methyl salicylate in one and of opium in one.

## CHEMICALS AND DRUGS.

Twenty-three samples of chemicals were sent in for analysis and 10 samples of medicinal drugs.

Twenty-eight samples of deleterious drugs were examined under the Deleterious Drugs Ordinance, these consisted of morphine, cocaine or novocain.

## METALS AND MINERALS.

Thirty-nine samples were received for assay. These included tin, ingots, tin ores, iron ores, gold ores, sand, pyrites, molybdenite, arsenious oxide, coal, etc.

## WATER.

Twenty-one samples of water were analysed, generally with the object of determining their suitability for drinking purposes.

## MILK.

Eighteen samples of fresh cow's milk were received, one only of these was found to be adulterated.

One sample of human milk was examined.

Seventeen samples of Tinned Milk were analysed.

## URINES.

Thirty-eight samples of urine were received from the Hospital usually for the determination of sugar or urea.

## MISCELLANEOUS.

A large number of miscellaneous samples were reported on. They included Illipe nuts (26 samples), Oil Cake, Cutch, Gambier, Sand, Cement, Jelutong, Rubber Substitute, Rubber Cement, Rice, Cloth, Tea, Clay Borings, Yams, Flour, Paint, Soils, Beeswax, Wood Preservatives, etc.

## PATENTS.

Reports were made on 31 applications for Patent Rights.

## STAFF.

On March 27th Dr. FRANKLAND DENT, M.Sc., Ph.D., F.I.C., went on leave prior to retirement after eighteen years devoted work, as head of this Branch. Mr. A. C. BROOKS joined the Department as an Assistant Analyst on July 29th.

Mr. M. JAMIESON was Assistant Analyst throughout the year.

I took over from Dr. DENT when he went on leave.

## II.—PENANG.

REPORT BY MR. J. W. HADDON, B.Sc., F.I.C., *Deputy Analyst*.

Details of revenue and expenditure for the Department for 1924 are given in the following table together with the revenue for 1923:—

<i>Revenue.</i>	<i>1923.</i>	<i>1924.</i>	<i>Expenditure.</i>	<i>1924.</i>
	\$ c.	\$ c.		\$ c.
Petroleum Inspection Fees ...	1,460 00	2,430 00	Personal Emoluments	12,388 31
Miscellaneous ...	1,514 50	1,784 00	Stores ...	378 18
Certificate for Export of Pet. Fees	145 50	159 00	Miscellaneous ...	174 07
			Transport and Travel-ling Allowance ...	177 55
	<u>3,120 00</u>	<u>4,375 00</u>		<u>13,118 11</u>

The increased revenue from petroleum inspection fees is chiefly accounted for by the large increase in the quantity of heavy petroleum (liquid fuel) imported during the year.

Six hundred and four reports on general analytical work, and 40 reports on the testing of petroleum were issued.

## PETROLEUM.

The following table shows the amount of kerosene and heavy petroleum imported and tested during the year. All the samples passed the standard tests.

## A. KEROSENE.

	<i>No. of Consignments.</i>	<i>Tons.</i>	<i>Gallons.</i>
	—	—	—
East Indian Bulk Oil ...	7	8,715.49	—
East Indian Oil in Tins ...	2	—	800
American Bulk Oil ...	2	7,247	—
American Oil in Tins ...	3	—	280,000
American Oil in Tins*	2	—	184,000
	<u>16</u>	<u>15,962.49</u>	<u>464,800</u>

\* Transhipped to Port Swettenham.

## B. HEAVY PETROLEUM.

	<i>No. of Consignments.</i>	<i>Tons.</i>	<i>Galtons.</i>
East Indian in Bulk	... 19	26,134·087	—
East Indian in Drums	... 6	—	48,750
	25	26,134·087	48,750

## LIQUORS REVENUE ORDINANCE.

Two thousand two hundred and ninety samples of imported or locally manufactured liquors were examined for their alcoholic strength: 619 of these were sent in by the Kedah Customs and the remainder by the local monopolies department.

Complete analyses were carried out on 29 samples of brandy: of these 12 did not comply with the local standard.

Of 7 samples of toddy examined one was old and excessively acid.

One hundred and fifty-four exhibits in cases brought by the monopolies department and the police for various breaches of the Liquors Revenue Ordinance were examined and reported on: 22 of these consisted of bhang and most of the remainder of illicit samsoo.

## CHANDU REVENUE ORDINANCE.

One hundred and thirty-one exhibits in cases brought by the police and monopolies department under this Ordinance were examined and certified: they usually consisted of opium, chandu dross and non-Government chandu. A number of chandu samples purchased from licensed chandu shops were found to be genuine Government chandu. 24 lots of chandu dross sent in by the Kedah Government and the whole of the chandu dross bought by the monopolies department from licensed smoking shops were examined and valued.

## MILK.

Twenty-six samples of fresh milk were analysed: nine of these samples (including eight purchased from licensed milk sellers) were adulterated by the addition of large percentages of water.

Two samples of tinned condensed milk and one of tinned cream were examined and reported on.

## WATER.

Of 14 samples of drinking water examined 5 were found to be unsatisfactory. Three samples were examined as to their suitability for special commercial purposes, while one sample submitted by the police was found to have been rendered undrinkable by the addition of salt and lime.

## COUNTERFEIT COINS.

Exhibits in six cases of counterfeiting coin were examined and reported on: they comprised the usual moulds, base metal, etc. and 423 counterfeit coins.

An elaborate equipment for forging Straits Settlements 10-cent notes was also reported on.

## EXPLOSIVES.

Four consignments of gelignite amounting altogether to 125,000 lbs. were imported during the year: samples from each consignment passed the prescribed tests.

## TOXICOLOGY.

Eleven specimens of human viscera were examined: the poisons identified were ammonia in two cases and alcohol and opium in one case each. Of five specimens of stomach contents examined four were found to contain opium.

Three samples of foodstuffs suspected of having been tampered with were found to contain no poison.

Twenty-seven exhibits consisting mainly of various poisonous drugs were examined and reported on.

## MISCELLANEOUS.

Two hundred and twenty-six samples of various substances not falling under any of the above headings were examined and reported on. Included amongst them were 89 samples of quinine (of which 37 were adulterated), examination of 45 articles for evidence of sea water damage, 35 samples of coconut products for estimation of their oil content, 13 samples of lubricating oil, 7 of liquid fuel, 7 of urine, and 5 of various forms of rubber.

Several consignments of rubber were surveyed prior to export.

## STAFF.

I was in charge throughout the year.

## APPENDIX "L".

## PATHOLOGICAL DEPARTMENT.

## I.—SINGAPORE.

REPORT BY G. A. FINLAYSON, M.R.C.P., *Government Pathologist.*

*Laboratory, Sepoy Lines.*

Total number of specimens examined	...	4,014
Widal reaction for "Enterica".—		
Enteric—Positive reaction	... 48	} ... 299
Partial ,,	... 48	
Negative ,,	... 203	
Paratyphoid B.		
Positive ,,	... 1	} ... 11
Partial ,,	... 3	
Negative ,,	... 7	
Widal reaction for Bacillary Dysentery.—		
Positive reaction	... 3	} ... 4
Partial ,,	... 1	
Malaria—Parasite present	... 8	} ... 84
,, absent	... 76	
Syphilis—Wassermann Reaction.—		
Positive	... 1,164	} ... 2,831
Partial	... 282	
Partial	... 195	
Unfit	... 1	
Negative	... 1,189	
Diphtheria—throat swab.—		
Bacillus present	... 8	} ... 46
,, absent	... 38	
Gonococcus—		
Diplococcus present	... 4	} ... 32
,, absent	... 28	

## Sputum for T. B.—

Bacillus present	...	19	}	...	71
„ absent	...	52			

## Leprosy.—

Bacillus present	...	10	}	...	32
„ absent	...	22			

## Cerebro-spinal fluid—

Pneumococcus present	...	...	1
Faeces—Entamœba	Histoly-	}	
tica—active	...	7	
Entamœba	Histoly-	}	
tica—cysts	...	2	
B. Dysenteriae	isol-	}	221
ated	...	3	
Ova observed	...	64	
Negative findings	145		

## Urine—Examined for organisms.—

„ B. Coli, etc.	105	}	...	164
„ casts, etc.	59			

## Varied, including.—

Blood culture	...	7	}	...	218
Vaccines prepared	...	16			
Histological sections	128	}			
Differential count	...	5			
Examination of pus,	...	}			
etc.	...	62			

Several samples of water were examined and reports forwarded, while a few articles were tested for the presence or absence of Human Blood.

## CENTRAL MORTUARY, SEPOY LINES.

Total number of autopsies	...	...	188
Died under 24 hours of admission	...	...	55
„ „ 48 „ „ „	...	...	11
Inquest cases	...	...	130

*Return showing immediate cause of death.*

Beri-beri	...	...	...	8
Cholera	...	...	...	2
Plague Bubonic	...	...	...	1
Lobar Pneumonia	...	...	...	5
Tuberculosis	...	...	...	4
Enteric Fever	...	...	...	2
Dysentery	...	...	...	7
Suppurative Peritonitis	...	...	...	6
Septic conditions, varied	...	...	...	5
Malaria	...	...	...	6
Blackwater Fever	...	...	...	1
New Growth	...	...	...	3
Accidents, etc.	...	...	...	76
Meningitis, acute	...	...	...	9
Disease of Nervous System	...	...	...	3
„ „ Respiratory	...	...	...	5
„ „ Circulatory	...	...	...	22
„ „ Blood	...	...	...	4
„ „ Alimentary	...	...	...	11
„ „ Genito-urinary system	...	...	...	7
Too decomposed	...	...	...	1

*Return showing incidence of disease.*

Beri-beri ...	8	Cerebro-spinal menin-	
Dysentery ...	9	gitis ...	1
Amoebic, Chronic ...	2	Cholera ...	2
Bacillary, Acute ...	6	Plague, Bubonic ...	1
Bacillary, Chronic ...	1	Neoplasm ...	4
Enteric Fever ...	3	Carcinoma Liver ...	1
Pigmented Peyers' Patches ...	3	Sarcoma, Retroperi-	
Malaria Subtertian ...	9	tomeal ...	1
Malaria Pigment only	18	Sarcoma, Tonsil ...	1
Blackwater Fever ...	1	Myoma Uteri ...	1
Uræmia ...	2	Syphilis ...	27
		Schistosomiasis ...	1

*A.—Nervous System.*

Cerebral Softening ...	2	Meningitis ...	10
Cerebellar Cysts ...	1	Cerebro-Spinal ...	1
Cerebellar Hæmorrhage ...	1	Pneumococcic ...	1
Acute Mania ...	1	Pyogenic ...	5
		Tuberculous ...	3

*B.—Circulatory System.*

Aneurysm ...	8	Aortic and Mitral,	
Aorta ...	6	Chronic ...	3
Innominate Artery	1	Brown Atrophy, heart	1
Iliac Artery ...	1	Arteriosclerosis, ad-	
Aneurysmal Dilation		vanced ...	8
Aorta	8	Leukæmia, Lymphatic	2
Aortitis, Syphilitic ...	15	Anæmia Splenic ...	2
Acute Cardiac Dilata-		Status Lymphaticus	1
tion ...	1	Myocarditis, chronic	2
Endocarditis ...	8	Thrombosis aortic ...	1
Mitral, Acute ...	1	Pericarditis, tubercu-	
Aortic, Chronic	4	lous ...	1

*C.—Respiratory System.*

Broncho-Pneumonia,		Pulmonary Emphy-	
Acute ...	14	sema advanced ...	2
Pleurisy, Acute ...	7	Pulmonary Emphy-	
Pleurisy, Chronic ...	9	sema surgical ...	1
Pleurisy, Tubercu-		Pulmonary abscess ...	2
lous ...	17	„ Gangrene	1
Lobar Pneumonia,		„ Collapse	1
Acute ...	6	Pneumothorax ...	1
Right and Middle	2	Tuberculosis—lung ...	22
Right Middle and		Active ...	15
lower ...	2	Quiescent ...	7
Left Upper ...	1	Tuberculosis—larynx	2
Left Lower ...	1	Tuberculous medias-	
		tinal gland ...	2

*D.—Alimentary System.*

Septic ulcer—gastric, chronic ...	2	Intestinal obstruction	3
Cholangitis, acute ...	1	Acute ...	2
Calculi biliary ...	4	Chronic ...	1
Hepatic cirrhosis ...	6	Intestinal tuberculosis	5
Perihepatitis chronic	3	Entero-colitis, acute	1
Gumma, liver ...	3	Peritonitis acute ...	8
Abscess, liver, septic	2	Dysenteric ulcer	1
Perisplenitis ...	1	Enteric ...	1
Gumma spleen ...	1	Appendicitis	1
Appendicitis acute ...	3	Traumatic ...	2
Oesophageal ulcer ...	2	Salpingitis ...	1

*E.—Genito-urinary System.*

Nephritis ...	7	Gumma kidney ...	1
Acute parenchymatous ...	1	Calculus kidney ...	3
Chronic parenchymatous ...	6	Ovarian cyst ...	1
Interstitial nephritis	5	Salpingitis ...	3
Pyelonephritis ...	1	Acute ...	1
Pyelitis ...	1	Chronic ...	2
Hydronephrosis ...	3	Hydrosalpinx ...	2
		Cystitis, acute ...	2
		Uræmia ...	2

*F.—External Causes.*

Asphyxia ...	15	Fracture ...	47
Drowning ...	5	Skull ...	18
Hanging ...	8	Spine ...	2
Strangulation ...	1	Pelvis ...	3
Foreign body ...	1	Clavicle ...	2
Gunshop wound ...	5	Sternum ...	4
Skull ...	2	Ribs ...	11
Chest ...	3	Femur ...	2
Dislocation of spine	1	Humerus ...	1
Fracture—Dislocation of spine ...	1	Tibia fibula ...	4
Stab wounds ...	28	Rupture ...	11
Chest ...	7	Spleen ...	6
Heart ...	3	Lung ...	1
Lung ...	4	Stomach ...	1
Abdomen ...	6	Gut ...	2
Liver ...	3	Liver ...	1
Kidney ...	1	Laceration ...	25
Stomach ...	2	Brain ...	11
Gut ...	2	Lung ...	4
Cut throat ...	1	Aorta ...	5
Poisoning ...	9	Liver ...	5
Opium ...	4	Spleen ...	4
Chloroform ...	3	Hæmorrhage ...	17
Veronal ...	1	Extradural ...	6
Tuba Root ...	1	Subdural ...	3
		Cerebral ...	8

*G.—Varied Conditions.*

Imperforate Anus ...	1	Cellulitis ...	2
Kyphosis with Lordosis spine ...	2	Dermatitis arsenical	1

## HELMINTHIASIS.

Anchylostoma Duodenale ...	6	Trichuris Trichiura	2
Ascaris Lumbricoides	17	Clonorchis Sinensis	6

## TAN TOCK SENG MORTUARY.

Number of autopsies where a complete examination was carried out and protocol taken	...	...	...	...	640
Died within 24 hours of admission	...	...	...	...	169
Died within 48 hours of admission	...	...	...	...	68
Inquest cases	...	...	...	...	126

*Return showing cause of Death.*

Beri-beri	...	47	Disease of Circulatory System	...	69
Plague	...	1	Disease of Respiratory System	...	31
Cholera	...	2	Disease of Alimentary System	...	38
Cerebro-spinal Meningitis	...	2	Disease of Genitourinary System	...	30
Lobar Pneumonia	...	56	Anæmia—splenic	...	1
Malaria	...	48	„ pernicious	...	1
Tuberculosis	...	50	Leukæmia Lymphatic	...	3
Leprosy	...	4	Neoplasm	...	38
Enteric fever	...	10	Anchylostomiasis	...	10
Dysentery	...	45	Schistosomiasis	...	3
Diphtheria	...	2	Injuries, etc.	...	68
Tetanus	...	2	Poisoning	...	3
Suppurative Peritonitis	...	25	Too decomposed	...	2
Septic conditions, varied	...	14			
Disease of Nervous System	...	35			

*Return showing Incidence of Disease.*

Beri-beri	...	47	Pigmented Peyer's patches	...	17
Dysentery	...	100	Cerebro-spinal Meningitis	...	2
Amœbic acute	...	9	Diphtheria	...	2
„ chronic	...	29	Sapraemia	...	6
„ quiescent	...	7	Septicæmia	...	3
Bacillary acute	...	29	Pyæmia	...	4
„ chronic	...	18	Tetanus	...	2
„ quiescent	...	1	Plague	...	1
Mixed infection	...	7	Cholera	...	2
Enteric fever	...	20	Anæmia splenic	...	1
Malaria	...	62	„ pernicious	...	1
Acute S. T.	...	43	Leukæmia Lymphatic	...	3
„ B. T.	...	4	Peritonitis acute—general	...	22
„ Q	...	1	Peritonitis acute—localised	...	14
„ S. T. and B. T.	...	2	Peritonitis chronic	...	9
Chronic S. T.	...	11	„ tuberculous	...	11
Malarial Pigment	...	85	Syphilis	...	137
Anchylostomiasis	...	14			
Schistosomiasis	...	6			

*A.—Nervous System.*

Cerebral Gumma	...	11	Meningitis—Acute.—		
„ Hæmorrhage	...	9	Cerebro-spinal	...	2
„ Oedema	...	3	Pneumococcic	...	5
Cerebellar Gumma	...	1	Septic	...	3
Hydrocephalus	...	2	Tuberculous	...	5
Meningitis—acute	...	17	Syphilitic	...	2

*B.—Circulatory System.*

Aneurysm ...	15	Chronic mitral ...	5
Aorta ...	12	„ aortic and	
Innominate artery ...	1	mitral ...	13
Heart ...	2	Arteriosclerosis ad-	
Aneurysmal Dilata-		vanced ...	47
tion of Aorta ...	22	Thrombosis ...	3
Aortitis syphilitic ...	84	Cerebral sinus ...	1
Endarteritis—smaller		Basilar artery ...	1
vessels ...	13	Common carotid ...	1
Endocarditis ...	45	Pericarditis ...	31
Acute mitral ...	3	„ acute ...	14
„ aortic ...	3	„ chronic ...	14
„ tricuspid ...	1	„ tuberculous ...	3
„ aortic and		Myocarditis—chronic	15
mitral ...	2	Gumma heart ...	1
Chronic aortic ...	18		

*C.—Respiratory System.*

Oedema Glottidis ...	5	Pneumonia— <i>continued</i> .	
Broncho-pneumonia	57	Empyema ...	10
Acute ...	47	Pneumonia hypostatic	19
Chronic ...	5	Pulmonary collapse ...	9
Septic ...	5	„ abscess ...	8
Bronchiectasis ...	3	„ gangrene	7
Pleuritis ...	254	„ infarct ...	3
Acute ...	61	Tuberculosis lung ...	111
Chronic ...	102	Acute ...	87
Tuberculous ...	91	Quiescent ...	27
Pneumonia: lobar		Tuberculosis—larynx	7
acute ...	51	Syphilitic laryngitis ...	2
Right upper ...	9	Septic „ ...	1
„ middle ...	3	Pneumonia—chronic	15
„ lower ...	5	Right upper ...	1
„ upper and		„ lower ...	4
middle ...	2	„ upper and	
„ upper and		lower ...	1
lower ...	2	„ upper and	
Middle and lower		middle ...	1
complete ...	7	„ complete	1
Left upper ...	2	Left upper ...	3
„ lower ...	3	„ lower ...	2
„ complete ...	3	„ complete	1
Double ...	6		

*D.—Alimentary System.*

Abscess tonsillar ...	1	Splenic abscess ...	6
Cancrum oris ...	2	„ gumma ...	1
Peptic ulcer ...	20	„ infarct ...	8
Gastric ...	15	Perisplenitis ...	18
Duodenal ...	4	Intussusception ...	2
Gastric and duo-		Intestinal obstruction	
denal ...	1	acute ...	2
Appendicitis, acute ...	5	Perianal abscess ...	1
Subphrenic abscess ...	1	Peritonitis general ...	19
Hepatic cirrhosis ...	41	Ulcer:—	
Chronic perihepatitis	30	Gastric ...	4
Cholecystitis acute ...	10	Duodenal ...	1
Cholangitis ...	15	Enteric ...	4
Biliary calculi ...	22	Tuberculous ...	2
Tuberculosis—gut ...	30	Appendicular ...	2
„ liver ...	1	Pyæmic ...	1
„ spleen ...	6	Perianal ...	1
„ suprarenal ...	1	Intussusception ...	1
„ peritoneum ...	11	Strangulated her-	
„ tongue ...	1	nia ...	1
Hepatic gumma ...	5	Peritonitis—local ...	6
„ abscess ...	9	Cholecystitis ...	3
Amœbic ...	2	Dysentery ...	1
Septic ...	7	Traumatic ...	2

*E.—Genitourinary System.*

Parenchymatous ne-		Hæmaturia ...	1
phritis acute ...	7	Hydronephrosis ...	1
Parenchymatous ne-		Cystitis, acute ...	5
phritis chronic ...	32	Tuberculosis of bladder	1
Interstitial nephritis	17	„ „ testis	1
Pyelonephritis ...	4	Gumma of testis ...	1
Pyelitis ...	3	Urinary calculus ...	1
Pyonephrosis ...	2	Extravasation of urine	2
Renal abscess ...	1	Stricture urethra ...	2
„ calculus ...	4	Prostatic abscess ...	2
„ cysts ...	14	„ hypertrophy	1
„ Tuberculosis ...	6	Uræmia ...	4

*F.—External Causes.*

Asphyxia	...	18	Rupture— <i>continued.</i>		
Drowning	...	4	Urethra	...	1
Hanging	...	11	Fracture	...	25
Strangulation	...	1	Skull	...	10
Overlaying	...	2	Spine	...	2
Burns	...	3	Femur	...	2
Gunshot wound	...	2	Tibia and Fibula	...	1
Cut throat	...	2	Gut	...	4
Stab wound	...	42	Chest wall	...	2
Heart	...	3	Trachea	...	1
Lung	...	7	Subclavian artery	...	1
Liver	...	5	Brachial artery	...	1
Kidney	...	1	Jugular vein	...	1
Spleen	...	1	Inferior	...	16
Abdomen	...	6	Vena cava	...	1
Stomach	...	2	Aorta	...	5
Oesophagus	...	1	Sternum	...	1
Poisoning	...	3	Mandible	...	2
Methyl salicylate	...	2	Maxilla	...	3
Aluminium chloride	...	1	Malar	...	2
Laceration	...	12	Pelvis	...	2
Brain	...	4	Multiple Injuries	...	6
Lung	...	7	Hæmorrhage	...	15
Liver	...	1	Meningeal	...	2
Rupture	...	10	Subdural	...	5
Spleen	...	6	Cerebral	...	8
Liver	...	3			

*G.—Varied Conditions.*

Psoas abscess	...	3	Neck	...	3
Caries of spine	...	1	Face	...	1
Kyphosis	...	2	Hand	...	1
Scoliosis	...	1	Thigh	...	1
Diverticula—duodenal	...	1	Scrotum	...	1
Hernia	...	2	Leg	...	3
Femoral	...	1	Abdominal wsas	...	1
Inguinal	...	1	Mastoiditis	...	1
Cellulitis acute	...	14	Otitis media, acute	...	2
Pelvis	...	3			

## HELMINTHIASIS.

Anchylostoma Duodenale	...	62	Trichuris Trichura	...	31
Ascaris Lumbricoides	...	69	Clonorchis Sinensis	...	10

*Neoplasm—Malignant—Primary.*

Carcinoma—Nase—pharynx	...	5	Sarcoma—Mediastinal glands	...	3
Carcinoma—Larynx	...	1	Sarcoma—Retroperitoneal	...	1
Oesophagus	...	5	Sarcoma—Pituitary Body	...	1
Stomach	...	8	Sarcoma—Cæcum	...	1
Liver	...	12	Melanotic, foot	...	1
Gall bladder	...	1			
Cæcum	...	1			

Papilloma—Urinary bladder 1—locally malignant Myeloma— multiple.

## TAN TOCK SENG HOSPITAL RETURNS.

Year.	Total post mortem examinations.	Malaria.	Dysentery.	Tuberculosis.	Beri-Beri.
—	—	—	—	—	—
1920 ...	1,306	182	188	277	14
1921 ...	1,530	205	238	318	75
1922 ...	1,578	168	305	382 24%	107
1923 ...	1,300	134	162	372 29%	64
1924 ...	1,301	130	151	378 29%	77

Attention may also be called to the large number which show definite syphilitic visceral lesions.

*Staff.*—I returned from furlough in April 1924 and took over charge of the Department from Dr. J. C. TULL who returned to duty in Penang. There has been no change in the personnel.

## II. PENANG.

REPORT BY J. C. TULL, M.D., M.R.C.P., *Government Pathologist, Penang.*

	1923.	1924.
Total number of specimens examined ...	30,061	37,580
<i>Blood Films.</i> —Total number examined ...	10,238	10,013
Number positive to Subtertian Malaria ...	598	943
Number positive to Tertian Malaria ...	376	572
Number positive to Quartan Malaria ...	8	17
<i>Stools.</i> —Total number examined ...	11,663	14,852
Number positive to Ankylostoma Ova ...	1,734	2,741
Number positive to Ascaris Ova ...	2,110	3,610
Number positive to Entamoeba histolytica ...	96	138
Number positive to Entamoeba Coli ...	178	242
Number positive to B. dysenteriae (Flexner) ...	—	39
Number positive to B. dysenteriae (Shiga) ...	—	—
<i>Urine.</i> —Total number examined ...	4,295	7,877
<i>Sputum.</i> —Total number examined ...	1,540	1,773
Number positive to B. Tuberculosis ...	316	394
<i>Films for Gonococci.</i> —Total ...	521	424
Number positive to Gonococci ...	187	179
<i>Films for Bacillus Leprae.</i> —Total ...	67	187
Number positive to B. Leprae ...	17	42
<i>Films and Cultures for Meningococci.</i> —Total ...	37	37
Number positive to Meningococci ...	28	39
<i>Cultures for B. Diphtheriae.</i> —Total ...	21	8
Number positive to B. Diphtheriae ...	3	1
<i>Autogenous Vaccines.</i> —Total ...	24	36
<i>Agglutination Tests for Typhoid Group.</i> —Total ...	41	47
Number positive to B. Typhosus ...	7	9
Number positive to B. Paratyphosus A. ...	1	3
Number positive to B. Paratyphosus B. ...	—	—
<i>Wasserman Reaction.</i> —Total ...	1,195	1,350
Number positive ...	867	1,074
<i>Sections from Tissues</i> ...	46	44
<i>Bacteriological Examination on Drinking Water.</i> —Total ...	38	27
<i>Blood Counts</i> ...	93	103
<i>Bacteriological Cultures from various Body Fluids</i> ...	222	539
<i>Post Mortem Examinations</i> ...	236	242

*Post-mortem diagnosis for 1924.*

Abscess liver	...	...	...	...	1
Abscess lung	...	...	...	...	1
Ankylostomiasis	...	...	...	...	1
Asphyxia from hanging	...	...	...	...	16
Beri-beri	...	...	...	...	1
Carcinoma liver (primary)	...	...	...	...	2
Carcinoma Stomach	...	...	...	...	3
Cardiac dilatation (acute)	...	...	...	...	7
Cerebral Hæmorrhage	...	...	...	...	2
Cholecystitis	...	...	...	...	1
Cirrhosis liver	...	...	...	...	4
Drowning	...	...	...	...	14
Dysentery—amœbic	...	...	...	...	4
Dysentery—bacillary	...	...	...	...	8
Empyema	...	...	...	...	1
Endocarditis—mitral—chronic	...	...	...	...	9
Epithelioma palate	...	...	...	...	1
Fracture dislocation vertebræ with hæmorrhage	...	...	...	...	2
Fracture skull, with extra, dural hæmorrhage	...	...	...	...	11
Fracture arm and pelvis, with rupture of urinary bladder	...	...	...	...	1
Fracture ribs, with hæmothorax	...	...	...	...	2
Gastric ulcer—perforated	...	...	...	...	2
Intestinal obstruction, acute, with peritonitis	...	...	...	...	1
Leprosy	...	...	...	...	1
Malaria	...	...	...	...	9
Meningitis—cerebro-spinal	...	...	...	...	1
Nephritis (chronic)	...	...	...	...	12
Pericarditis (acute)	...	...	...	...	2
Peritonitis—general	...	...	...	...	7
Septicæmia following cellulitis thigh	...	...	...	...	1
Stab wounds perforating abdomen and thorax, with hæmorrhage	...	...	...	...	4
Septicæmia, following cellulitis arm	...	...	...	...	2
Septicæmia—cause undermined	...	...	...	...	6
Plague—bubonic	...	...	...	...	1
Pneumonia—lobar	...	...	...	...	16
Pneumonia—lobular	...	...	...	...	14
Poisoning—alkaloidal	...	...	...	...	1
Rupture abdominal aortic aneurysm	...	...	...	...	1
Rupture thoracic aortic aneurysm	...	...	...	...	3
Rupture spleen, with hæmorrhage	...	...	...	...	2
Sarcoma cœcum	...	...	...	...	2
Arterio—sclerosis	...	...	...	...	4
Syphilis—visceral	...	...	...	...	6
Tetanus	...	...	...	...	1
Tuberculosis—Pulmonary	...	...	...	...	50
Nephritis—acute	...	...	...	...	1

*Staff.*—Dr. A. N. KINGSBURY was acting Government Pathologist, until April 14th when Dr. J. C. TULL, Government Pathologist, returned from Singapore.

## III. MALACCA.

REPORT BY S. N. BARDHAN, L.M.S., SINGAPORE, D.T.M. AND H., *Deputy Pathologist, Malacca.*

The abstract of works :—

Examination of fæces	...	...	2,878
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*For ova.*—

Ankylostoma ova detected in	...	395
Round-worm ova detected in	...	225
Whip-worm ova detected in	...	426
Ankylostoma and round-worm ova detected in	...	119
Ankylostoma and whip-worm ova detected in	...	159
Ankylostoma Round-worm and whip-worm ova detected in	...	164

*For Amœba.*—

Amœba histolytica detected in	...	39
Amœba histolytica not detected in	...	218

*For Bacillus Tuberculosis.*—

Positive	...	1
Negative	...	2

*For Sprue.*—

Lamblia detected in	...	1
Balantidium coli in	...	1
Trichomonas coli in	...	17
Strongyloid	...	92

These numbers are already included in the total for fæces :—

Examination of Blood	...	1,523
----------------------	-----	-------

*For Malaria.*—

Subtertian parasites detected in	...	167
Benign tertian parasites detected in	...	52
Quartan parasites detected in	...	74
Benign and Quartan detected in	...	8
Benign and Subtertian detected in	...	4
Subtertian and Quartan detected in	...	6
Subtertian, Quartan and Benign detected in	...	1
Pigmented large monocular detected in	...	1
No Parasite detected in	...	1,108

*For Widal Reaction.*—

Typhoid all negative	...	8
Paratyphoid A. all negative	...	6
Paratyphoid B. all positive	...	1
negative	...	5
Bacillary Dysentery, positive	...	2
negative	...	2
Differential leucocyte, bloodcount and hæmoglobin estimation	...	60
Examination of Blood for Filaria all negative	...	8
Examination of Blood-sugar	...	10

Brought forward	...	...	...	4,401
Routine examination of urine for albumin, sugar, cast, etc.	...	...	...	1,292
Examination of urine for Bacillus tuberculosis, negative	...	...	...	1
(Quantitative estimation of sugar was made in 37 and quantitative estimation of albumen was made in 7 cases. Nine urine showed Trichomonas. All these are included in the total for urine)				
Trichomonas. All these are included in the total for urine)				
Examination for sputum	...	...	...	465
For Bacillus tuberculosis, positive	...	117		
negative	...	312		
For Pneumococcus, positive	...	13		
negative	...	23		
Examination of Smears for Gonococcus,				
positive	49			
negative	118			167
Examination of Smears for B. Lepræ				
positive	17			
negative	43			60
				<hr/> 6,386
Examination of smears for B. pests—				
negative	...	...	...	1
Examination of pus and various fluids for organism, etc.	...	...	...	21
Identification of worms, etc.	...	...	...	4
Examination of medico-legal exhibits.—				
For human blood	...	...	5	
For goat blood	...	...	1	
For spermatozoa, etc.	...	...	2	
Examination of Pathological sections	...	...	...	14
Culture and smears for V Cholerae, all negative	...	...	...	12
Culture and smears for Meningococcus				8
Culture and smears for Diphtheria bacillus, all negative	...	...	...	10
Culture for bacilli of dysentery, positive				7
negative				25
Culture for Bacillus coli from urine, positive	...	...	...	5
negative	...	...	...	10
Culture for typhosus from faeces, negative	...	...	...	1
Preparation of antihuman hæmolytic amboceptor and antihuman precipitin sera	...	...	...	10
Bacteriological analysis of water samples				18
Wasserman Reaction	...	...		563
Post-mortem examination	...	...		75
				<hr/> Total 7,184

Ninety-two cases of strongyloid larvæ and 17 cases of Trichomonas in faeces and also 9 cases of Trichomonas in urine were detected.

## APPENDIX "M".

KING EDWARD VII COLLEGE OF MEDICINE, SINGAPORE.

REPORT BY G. H. MACALISTER, M.A., M.D., D.P.H., SINGAPORE.

*College Council.*—Mr. YOW NGAN PAN and Mr. TAN CHENG KEE were re-elected to serve to a further period of three years as members of the Council.

*The Senate.*—Mr. C. J. SMITH and Dr. G. A. FINLAYSON returned from leave and resumed duties as Professor of Clinical Surgery and lecturer in Pathology respectively.

Mr R. E. HOLTUM and Mr. N. SMEDLEY were appointed as joint lecturers in biology.

Dr. E. R. STONE was appointed as lecturer in medical jurisprudence.

*Students.*—Thirteen students completed their course and passed the final examination thus qualifying for the Diploma of L.M.S.

The total number of licentiates at the close of the year was 173.

There were at the close of the year 122 students on the register. Of these, 85 were actually at the College and 37 were under suspension for disciplinary reasons (of whom 35 have since returned).

The students were distributed amongst the successive years of study as follows:—

First year	...	...	...	...	22
Second year	...	...	...	...	25
Third year	...	...	...	...	13
Fourth year	...	...	...	...	24
Final year	...	...	...	...	38

Of these, 7 are Straits Settlements and 28 Federated Malay States Government students.

There are 16 Scholars and 19 exhibitioners.

*Curriculum.*—No modification of curriculum were introduced. The course of instruction laid down in 1923 are being introduced step by step. Thus the College is still in a transition period.

*Equipment and accommodation.*—The Straits Settlements Government Hostel for accommodation of students working at Tan Tock Seng Hospital was completed and ready for occupation at the close of the year.

Work on the new College building started in March; and construction was well advanced at the end of the year. It will probably be completed in August, 1925.

## APPENDIX "N".

MOSQUITO INSPECTOR'S ANNUAL REPORT, 1924.

PENANG AND PROVINCE WELLESLEY.

1. The appointment was created temporarily during the year and Mr. S. AMPALAVANAR assumed duty on the 1st July, 1924. This report is a review of work done since that date and reported from time to time in the form of reports or spot maps.

2. *Figures relating to Field and Laboratory Work.*—

(a) Breeding places described	...	...	1,196
Larvæ identified microscopically	...	...	10,002
Adults bred out and identified	...	...	1,792

## (b) Species of Anophelines found:—

<i>Species.</i>		<i>Times found.</i>	<i>No. of Specimens.</i>
—		—	—
<i>A. maculatus</i>	...	305	1,746
<i>A. karwari</i>	...	8	68
<i>A. aconitus</i>	...	23	75
<i>A. fuliginosus</i>	...	9	24
<i>A. subpictus</i> var: <i>malayensis</i>	...	98	626
<i>A. vagus</i>	...	274	4,414
<i>A. kochi</i>	...	151	989
<i>A. tessellatus</i>	...	4	5
<i>A. leucosphyrus</i>	...	51	326
<i>A. barbirostris</i>	...	308	1,410
<i>A. hyrcanus</i>	...	149	540
<i>A. brevipalpis</i>	...	3	6
<i>A. aitkeni</i>	...	6	8
Total		1,392	10,237

The important malaria carriers are arranged first in the above table.

3. *The Penang Hills Station.*—(a) The locality was visited with a view to measure the efficiency of the anti-malarial measures taken.

(b) The main interest of this observation is the discovery of breeding places of *A. leucosphyrus* (a jungle mosquito) in the open patches of ravines and open hot-holes on the slopes of the Hills Station: This is probably due to the temperature of the open spaces on this Hill being about the same as the temperature in jungles of smaller hills and flat areas. Breeding places of *A. maculatus* have not been discovered on the very top of the Hills Station although there are a number of likely places for this species. This is due, perhaps, to the lower temperature of the Hills. The nearest breeding places of *A. maculatus* were discovered in drains and seepage areas about 500 feet below the Hills Station at the site for the Hills Station Reservoir at Tiger Hill and in between the Middle and Upper Hills Railway Station.

(c) The mosquito survey and ten subsequent visits resulted in 19 anopheline breeding places being discovered. These contained 63 specimens of *A. maculatus* in 14 places and 22 specimens of *A. leucosphyrus* in 4 places.

4. *Waterfall Gardens.*—(a) This site was visited with a view to studying the breeding places of the anophelines there in order to prevent visitors being infected with malaria.

(b) The main interest of these observations is the finding of further breeding places of *A. leucosphyrus* in the open parts of the ravines which again is probably due to the difference in temperature. This is a confirmation of similar discoveries on the Hills Station. Breeding places of *A. maculatus* and *A. karwari* were also discovered in the open parts of these ravines but these species were not found at the very top of the Hills Station.

(c) The mosquito survey and ten subsequent visits resulted in 68 breeding places of Anophelines being discovered. These contained 195 specimens of *A. maculatus* in 27 places, 16 specimens of *A. karwari* in 3 places, 5 specimens of *A. aconitus* in one place, 22 specimens of *A. fuliginosus* in 7 places, one specimen of *A. vagus* in 1 place, 26 specimens of *A. kochi* in 3 places, 252 specimens of *A. leucosphyrus* in 34 places, 33 specimens of *A. barbirostris* in 6 places and 1 specimen of *A. hyrcanus* in 1 place.

5. *Aier Etam Village*.—(a) The locality was visited with a view to measuring the efficiency of the anti-malarial measures taken.

(b) The main interest of these observations is the finding of further breeding places of *A. leucosphyrus* in the open parts of ravines on higher slopes of hills which again is probably due to the lower temperature. This site may be compared with the Waterfall Gardens as they are situated on either side of the Penang Hills Station. Breeding places of *A. maculatus* were also discovered in the open parts of these ravines.

(c) The Mosquito Survey and 11 subsequent visits resulted in 103 anopheline breeding places being discovered. These contained 527 specimens of *A. maculatus* in 68 places, 51 specimens of *A. karwari* in 4 places, 90 specimens of *A. vagus* in 13 places, 53 specimens of *A. kochi* in seven places, 51 specimens of *A. leucosphyrus* in 12 places and 53 specimens of *A. hyrcanus* in 5 places.

6. *Tanjong Bungah and Tanjong Tokong*.—

(a) This locality was inspected with a view to measuring the efficiency of the anti-malarial measures in being.

(b) The main interest in this observation is the absence of any larvæ in the seepage wells at the hillfoot in the village of Tanjong Tokong which are the most likely places there for *A. maculatus*. This absence is probably due to the ova, larvæ and pupæ being carried out with the water for bathing or drinking purposes. *A. Maculatus* was discovered in a rock below the Swimming Club Grotto which is washed out by the spring tides.

(c) The mosquito survey and nine subsequent visits resulted in 14 breeding places of anophelines being discovered. These contained 89 specimens of *A. maculatus* in ten places, 24 specimens of *A. vagus* in 3 places and 8 specimens of *A. kochi* in one place.

7. *Telok Bahang*.—(a) This village was visited because malaria persisted although oiling was carried out.

(b) Breeding places of *A. maculatus* were found on the banks of the two smaller streams and their tributaries. The third stream was free except for its tributary which drains the ravine just in front of the Forest Guard's Quarters.

(c) The mosquito survey resulted in 37 breeding places of anophelines being discovered. These contained 70 specimens of *A. maculatus* in 27 places, 27 specimens of *A. kochi* in 4 places, 2 specimens of *A. leucosphyrus* in one place and 8 specimens of *A. aitkeni* in 6 places.

8. *Sungei Glugor*.—(a) This village was visited with a view to discovering the breeding places of anophelines in order to prevent malaria.

(b) The essential points about this work are the finding of several breeding places of *A. maculatus* near Glugor Village and the proposed site of the Marine Dépôt and one breeding place of *A. aconitus* in the grassy swamp behind the mosque.

(c) The mosquito survey resulted in 136 breeding places of anophelines being discovered. They contained 214 specimens of *A. maculatus* in 44 places and 8 specimens of *A. aconitus* in one place, 7 specimens of *A. subpictus* var *malayensis* in one place, 174 specimens of *A. vagus* in 23 places, 124 specimens of *A. kochi* in 25 places, 184 specimens of *A. barbirostris* in 41 places, 92 specimens of *A. hyrcanus* in 26 places and 6 specimens of *A. brevipalpis* in 3 places.

9. *Sungei Nibong*.—(a) This village was visited with a view to discovering the breeding places of anophelines in order to prevent malaria.

(b) The essential points about this work are the finding of breeding places of *A. maculatus* at the head of a ravine about  $\frac{1}{4}$  mile away from the village, and breeding places of *A. aconitus* and *A. fuliginosus* in the neighbouring padi fields.

(c) The mosquito survey resulted in 100 breeding places of anophelines being discovered. They contained 22 specimens of *A. maculatus* in 5 places, 31 specimens of *A. aconitus* in 10 places, 2 specimens of *A. fuliginosus* in 2 places, 171 specimens of *A. vagus* in 25 places, 25 specimens of *A. kochi* in 3 places, 262 specimens of *A. barbirostris* in 50 places and 136 specimens of *A. hyrcanus* in 31 places.

10. *Pulau Jerejak*.—(a) This site was visited with a view to studying the efficiency of anti-malarial measures already taken. A mosquito survey of this site was not made because the writer had made surveys of this island in 1921 and 1923. Reports on these surveys were submitted by the Malaria Research Officer, Federated Malay States (Dr. H. P. HACKER).

(b) Oiling as an anti-malarial measure is being carried out twice weekly on this island while on the other parts of the Settlement of Penang this measure is only taken once weekly. In spite of this 32 breeding places of *A. maculatus* containing 154 specimens were obtained in 21 visits during the year.

11. *Butterworth*.—(a) The locality was visited with a view to discovering the various anopheline breeding places in order to prevent malaria.

(b) The main interest of this observation is the discovery of breeding places of *A. subpictus* var *malayensis* within close reach about (15 yards) of salt water. Hitherto it has rarely if ever been found near the sea.

(c) The mosquito survey resulted in 387 breeding places of anophelines being discovered. They contained 9 specimens of *A. aconitus* in 5 places, 518 specimens of *A. subpictus* var *malayensis* in 85 places, 1,902 specimens of *A. vagus* in 149 places, 72 specimens of *A. kochi* in 16 places, 2 specimens of *A. tessellatus* in 2 places, 824 specimens of *A. barbirostris* in 178 places and 71 specimens of *A. hyrcanus* in 22 places.

12. *Penaga Wireless Station*.—(a) A visit was made to this locality with a view to discovery of the breeding places of anopheline in the immediate neighbourhood in order to prevent malaria.

(b) The mosquito survey resulted in 21 breeding places of anophelines being discovered. They contained 52 specimens of *A. subpictus* var *malayensis* in 11 places, 16 specimens of *A. vagus* in 3 places, 2 specimens of *A. tessellatus* in 1 place 7 specimens of *A. barbirostris* in 4 places and 11 specimens of *A. hyrcanus* in 4 places.

13. *Bukit Mertajam*.—(a) The locality was visited to study the breeding places of anophelines with a view to the prevention of Malaria.

(b) The main interest of this observation is the finding of breeding places of *A. maculatus* in concrete drains, and pools on the edges of these concrete drains in the Railway Area. Also the absence of any larvæ in a stream polluted with pig dung in comparison with a neighbouring stream where *A. maculatus* was found to breed in large numbers.

(c) The mosquito survey and seven subsequent visits resulted in 81 breeding places of anophelines being discovered. These contained 248 specimens of *A. maculatus* in 31 places, one specimen of *A. karwari* in 1 place, 2 specimens of *A. aconitus* in 1 place, 1 specimen of *A. subpictus* var *malayensis* in one place, 147 specimens of *A. vagus* in 30 places, 128 specimens of *A. kochi* in 20 places, 22 specimens of *A. barbirostris* in 6 places and 4 specimens of *A. hyrcanus* in 2 places.

14. *Sungei Bakap*.—(a) This locality was visited with a view to discovering the breeding places of anophelines (especially about proposed site for the Government Officers).

(b) The essential points about this work are the finding of several breeding places of *A. maculatus* especially in the drains of the Rubber Estate in the neighbourhood of the proposed site for Government Offices and in drains along the hill slopes towards the East side of the village.

(c) The mosquito survey resulted in 158 breeding places of anophelines being discovered. They contained 133 specimens of *A. maculatus* in 38 places, 20 specimens of *A. aconitus* in 5 places, 71 specimens of *A. vagus* in 9 places, 239 specimens of *A. kochi* in 55 places, 1 specimen of *A. tessellatus* in 1 place, 74 specimens of *A. barbirostris* in 22 places and 169 specimens of *A. hyrcanus* in 57 places.

15. Specimens received:—

Forty-five batches of specimens were received for identifications during the year as follows:—

(a) Forty-four batches of specimens were received from the Municipal Health Office by permission of the Chief Medical Officer. They contained 6 specimens of *A. maculatus* in three batches, 1,700 specimens of *A. vagus* in 38 batches, 137 specimens of *A. kochi* in 13 batches and 2 specimens of *A. barbirostris* in 2 batches.

(b) One batch of specimens was received from the General Hospital. These larvæ were kept in the laboratory to obtain the adult from them and as a result 23 adults of *Stegomyia scutellaris* were bred out.

16. Work in relation to Padi Fields.—

(a) A total number of 47 breeding places of anophelines were described from Padi fields in the various localities during the year. They are classified as follows:—

1. *Swamp for Padi plantation*.—Twenty-nine breeding places of anophelines were described in swamps before the padi was planted:—

<i>Species.</i>		<i>Times found.</i>	<i>No. of Specimens.</i>
—		—	—
<i>A. aconitus</i>	...	4	7
<i>A. fuliginosis</i>	...	2	2
<i>A. subpictus</i> var <i>malayensis</i>	...	1	1
<i>A. vagus</i>	...	11	88
<i>A. kochi</i>	...	2	21
<i>A. barbirostris</i>	...	11	41
<i>A. hyrcanus</i>	...	10	48
		—	—
Total	...	41	208
		—	—

2. *Fields planted with Padi*.—Eighteen breeding places of anophelines were described in fields planted with Padi:—

<i>Species.</i>		<i>Times found.</i>	<i>No. of Specimens.</i>
—		—	—
<i>A. aconitus</i>	...	2	3
<i>A. subpictus</i> var <i>malayensis</i>	...	2	8
<i>A. vagus</i>	...	6	36
<i>A. barbirostris</i>	...	9	67
<i>A. hyrcanus</i>	...	8	32
		—	—
Total	...	27	146
		—	—

The above results will give a rough idea of the various species of anophelines commonly found in padi fields but as the record is only based on a small number of breeding places it is not of definite value. Besides the writer knows from his past experience that more species will be added to the above tables if the work is extended to a different type of country.

17. *Receptacles as breeding places of mosquitoes.*—

(a) Artificial receptacles, such as tins, earthenware, jars and pots, wooden boats and tubs, latex cups, etc., containing water were seen to contain mosquito larvæ. Also peculiar natural places, such as split cocoanuts, monkey cups or pitcher plants holes in trees, etc. Among these 6 receptacles were found in breeding places of anopheline mosquitoes. They are as follows:—  
 (1) Two boats kept on the shore at Butterworth were seen to contain a large number of anopheline and culecine larvæ. One hundred anopheline larvæ collected from them were *A. vagus*. (2) One earthenware jar and one small tin thrown away at Sungei Bakap were seen to contain 12 specimens of *A. kochi*. (3) One split cocoanut and one large iron frying pan thrown away at Sungei Glugor were seen to contain 8 specimens of *A. kochi* and 8 specimens of *A. vagus*.

Although the above discoveries of anophelines in artificial and peculiar natural receptacles are unusual, still they mark the danger of allowing such receptacles to be scattered about in any locality.

18. *Type Collection.*—A set of common anopheline mosquitos was received from the Acting Malaria Research Officer, Federated Malay States, for comparison with the specimens collected here. He has promised to send further specimens to make this set complete with every Malayan anopheline and also to supply a complete set of mounted larvæ of these species.

## APPENDIX "O".

Report on the treatment of Yaws and Syphilis in the Balik Pulau District by Assistant Health Officer, D. C. RICHARDS, L.M.S.

1. The total number of injections given was 1,522.

New cases treated during the year were 840 and the average number of injections per person was 1·8.

- 2 Fifty-two visits were made during the year, of these 47 were to Kongsis and 5 to Bayan Lepas.

The average number of injections per visit was about 30.

3. The number of first injections was ... 840 (new cases).  
 The number of second injections was ... 469  
 The number of third injections was ... 141  
 The number of fourth injections was ... 41  
 The number of fifth injections was ... 16  
 The number of sixth injections was ... 12  
 The number of seventh injections was ... 2  
 The number of eight injections was ... 1

Total ... 1,522

4.	Disease.	Intravenous injections.	
	Puru proper	... 446	878 injections for all forms of Yaws.
	Puru tertiary (bones, joints, etc.)	... 104	
	Puru Boboh	... 243	
	Kedai	... 61	
	Sopah	... 24	
	Syphilis Primary	... 24	613 injections for all forms of Syphilis.
	„ Secondary	... 529	
	„ Tertiary	... 64	
	Other diseases (Malaria. Anæmic, etc.)	... 31	
	Total	... 1,522	

*Nationality.—*

	<i>Males.</i>	<i>Females.</i>
Malays received 866 injections	543	323
Chinese received 584 injections	479	105
Tamils received 72 injections	68	4
<hr/> 1,522 <hr/>	<hr/> 1,090 <hr/>	<hr/> 432 <hr/>

6. *Drugs employed.—*

N. A. B. the equivalent of 660 tubes of 0.9 grm.

Bismuth paste for 14 cases.

Mercury Solution for 9 cases.

7. *Remarks.—(a)* The treatment of Yaws with N. A. B. is now very popular in the Kampongs but the fact that a course of at least six injections is necessary to effect a complete cure is not sufficiently appreciated. With the disappearance of the puru rash (which is effected with one injection or at most two) most people stop attending for months together and it is only when fresh symptoms appear that further treatment is sought. This practice is responsible for a waste of drugs and time.

(b) During this year a larger number of small children was brought for treatment than during the previous years but the theory that it is injurious to have treatment instituted until six months after the onset of the disease is still firmly held by the Malays.



## APPENDIX "A"

## LEPER ASYLUMS.

## I. LEPER ASYLUM, SINGAPORE.

REPORT BY E. D. LINDOW, M.R.C.S., L.R.C.P.

1. *Male Camp*:—

Remained on 31st December, 1923	...	...	47
Admitted during 1924	...	...	96
Discharged	...	...	—
Transferred to Pulau Jerejak	...	...	77
Absconded	...	...	6
Died	...	...	12
Remaining on 31st December, 1924	...	...	48

## Immediate causes of death:—

Pulmonary Tuberculosis	...	...	3
Sapraemia from septic ulcers	...	...	3
Asphyxia (Suicidal—hanging)	...	...	1
Beri-beri	...	...	1
Hepatic Cirrhosis and advanced Leprosy	...	...	1
Dysentery, Amœbic	...	...	1
Enteritis Acute	...	...	1
Acute Parenchymatous Nephritis	...	...	1

2. *Female Camp*:—

Remained on 31st December, 1923	...	...	39
Admitted during 1924	...	...	17
Discharged	...	...	—
Absconded	...	...	—
Transferred	...	...	—
Died	...	...	7
Remaining on 31st December, 1924	...	...	49

## Immediate causes of death:—

Sapraemia from septic ulcers	...	...	4
Pulmonary Tuberculosis	...	...	1
Dysentery, Bacillary	...	...	1
Leprosy advanced	...	...	1

## Return of Injections administered:—

		<i>Males.</i>	<i>Females.</i>
		—	—
Sodium Hydnocarpate	...	4,099	—
E. C. C. O.	...	1,160	2,532
Oscol Stibium	...	203	43

3. *Health of Camps*.—The number of patients who come up for voluntary treatment increased greatly during the year, with the result that both camps became very overcrowded and efficient treatment was difficult to carry out.

A new female camp to accommodate 60 is to be constructed during the coming year, and increased accommodation is being provided at Pulau Jerejak for males.

3. *Treatment*.—Injections were given twice a week to patients as a rule. When given more often, *vis.*, three times a week, the majority of the recently admitted cases tolerated the drug very well, but the older patients showed marked reactions.

E. C. C. O. was given to all the female patients intramuscularly as a routine.

Injections of Sodium Hydnocarpate 3 per cent were given to the majority of the male patients.

A few cases were selected for treatment by the infiltration method, directly into the nodules or patches themselves.

Reactions following the administration of these drugs were fairly common, but were only serious in two cases. Symptomatic and local treatment quickly restored these to normal.

Results of treatment in 1924:—

				<i>Males.</i>	<i>Females.</i>
Cured	...	...	...	—	—
Marked Improvement	...	...	...	4	4
Improvement	...	...	...	20	17
No Improvement	...	...	...	17	23
Getting Worse	...	...	...	6	5
Deaths	...	...	...	12	7

Cases mentioned in past reports have been followed up, with results appended:—

- (1) F. SCOTT.—Admitted January, 1918, showed improved condition during 1922, no improvement during 1923. During the year he received 61 intravenous injections of Sodium Hydnocarpate, but his condition is steadily getting worse.
- (2) CHUA BOON CHAY.—Admitted April, 1922. This patient who was getting worse in 1923, died in November, 1924.
- (3) LIM TUAH.—Was apparently cured and discharged in February, 1923. He was readmitted in September, 1924, with prominent nodules and general thickening of skin all over the face. Both ears enlarged and thickened. All over the body are wide thickened dark brown patches. Anæsthesia detected over dorsa of both feet and lower third right leg. Received 30 intramuscular injections of E. C. C. O. Condition at end of 1924. General colour of the skin improved, smears still positive but certainly shows improvement.
- (4) LIM SIEW NGO.—Admitted April, 1921. Condition at end of 1923, smears negative and definite improvement. Although not as well as in 1922. During 1924, he received 52 injections of E. C. C. O.: he is very prone to reactions: he shows no improvement, and smears are now positive.
- (5) CHUA CHYE HOO.—Age 9. Admitted April, 1921. Condition at end of 1923:—Definite improvement since admission although worse than in 1922. During 1924 he received 84 intramuscular injections of E. C. C. O. This case shows improvement, and smears of the left forearm are now negative.
- (6) SALIMA.—Admitted June, 1919. Received during 1924, 80 intramuscular injections of E. C. C. O. Unfortunately this case shows no sign of improvement.
- (7) LOW AH KUM.—Admitted November, 1922. Received in 1924, 86 intramuscular injections of E. C. C. O. Condition at end of 1924. Smears negative. No patches detected. No tremors, power of locomotion good. Ill-defined patches of anæsthesia distributed over lower third of legs. This case shows definite improvement.

Modern treatment is now generally accepted. The result since 1921 has been a continuous fall in the death-rate, and a consequent increase in numbers:—

<i>Year.</i>	<i>1921.</i>	<i>1922.</i>	<i>1923.</i>	<i>1924.</i>
Cases ...	810	868	888	891
Deaths ...	231	207	164	150

A number of different preparations have been given an extended trial during the past four years.

(1) Sodium Hydnocarpate 3 per cent solution, injected intravenously—dose  $\frac{1}{2}$  c. c. gradually increasing to 5 c. c. This drug is liable to set up an inflammation of the venous wall which leads to obliteration of the vein.

(2) Sodium Morrhuate.

(3) Sodium Soyate.

Strength and doses and method of administration same as Sodium Hypnocarpate.

These are useful drugs, as alternatives to Chaulmoogra preparations.

(4) Sodium Hydnocarpate and Sodium Soyate—equal quantities—given intravenously in doses of from  $\frac{1}{2}$  to 5 c. c., was often effective and caused less irritation than plain Sodium Hydnocarpate.

(5) E. C. C. O. Muir. The Ethyl Esters of Hydnocarpus Wightiana with camphor creasote and olive oil—dose  $\frac{1}{2}$  to 5 c. c. intravenously, intramuscularly or by subcutaneous infiltration.

E. C. C. O. has been used both alone and in combination with Thymol, but has not justified the high expectations formed of it. It probably contains too much creasote and camphor and not enough of the hydnocarpic compound. It is now used mainly as a nasal spray, as an adjuvant to other treatment.

(6) Moogrol, another preparation of the ethyl esters of the Chaulmoogric series is being tried intramuscularly both alone and with 5 per cent Thymol. It is doubtful whether it surpasses E. C. C. O.

(7) The intramuscular use of 10 per cent Thymol with Ol Morrhuae, suggested by Dr. HAMZAH of Sumatra, proved very painful and has been discontinued.

(8) The intramuscular use of a preparation of 20 per cent Ichthyol with Ol Morrhuae has been abandoned for the same reason.

(9) At the time of writing a preparation of the pure expressed oil of Hydnocarpus Wightiana, obtained by crushing the bean is giving the best results. 100 grains of camphor are added to each pound of the oil. The mixture is sterilised by heating to boiling point.—It is injected subcutaneously, and the infiltration method is employed.

(10) The Tai Fong Chee treatment, Dr. TRAVER's formula—3 parts pulverised Hydnocarpus anthelmintica or Wightiana, and 1 part pulverised Indian Hemp seed is being extensively used; the dose of the powder is 30 grains by mouth twice daily. It is being given to all advanced cases, to all for whom injections are unsuitable and, on non injection days, to many undergoing injections.

(11) The importance of the treatment of intercurrent disease, and of fresh food, and regular exercise, urged by Dr. MUIR, is recognised. The daily bath is essential and many lepers follow it by a good rub down with Chaulmoogra or Hydnocarpus oil.

(b) Quite 5 per cent of the lepers are to outward appearance in perfect health, and about 20 per cent can do an ordinary day's work. Over 200 at Pulau Jerejak are steadily employed.

(c) Increased Accommodation. For four years the overcrowding in the male leper asylum, Pulau Jerejak (for which the Singapore male camp is but a feeder) and in the Female Leper Asylum, Singapore, has had an adverse effect on the health of the inmates.

The new Female Leper Camp at Trafalgar Estate, Singapore, with adequate accomodation for 50 women will be finished early in 1926. The female camp in Penang which accommodates 48 is not overcrowded.

Extensions on the east coast of Pulau Jerejak providing accommodation for 320 extra males have just been completed.

The old leper asylum on the east coast of Pulau Jerejak is on a crowded site, with no space for agriculture and little opportunity for exercise. The new extensions are on flat land; neighbouring areas have been cleared for agriculture, fishing boats have been bought, and the keeping of fowl, goats and pigs is encouraged.

On the west coast a water reservoir is being provided in an area where more extensive cultivation is possible. When the reservoir is finished, it is intended to build sixty huts in this area, using leper labour as far as possible for their erection. Each hut will hold 3 men who will live under natural conditions instead of in wards (a number of wards will however always be required for crippled lepers). Should this experiment succeed there is a further area on the west coast available for the erection of more huts.

With additional huts it will be possible to improve some of the wards in the old asylum, which now contains 456 inmates, and to demolish others, making a corresponding reduction in the number of lepers there so that they may have adequate room—

Present accommodation.				Men.			
Old Asylum	...	...	456 including	one	30	bed	hospital ward.
Eurasian camp	...	...	8				
New extension	...	...	320 including	one	modern	40	bed hospital ward.
				784			

Further prospective accommodation in 60 huts is to be ready in one year. For detailed reports on Leper Asylums *see* Appendix A.—Pages 15 - 21.

ZYMOTIC DISEASES.

10. The table gives the number of cases of Zymotic Diseases occurring in the Colony during 1923 and 1924, excluding imported cases treated in Maritime Quarantine Stations:—

SETTLEMENT OR PROVINCE.		PLAGUE.				CHOLERA.				SMALL-POX.				CEREBRO-SPINAL MENINGITIS.			
		1923.		1924.		1923.		1924.		1923.		1924.		1923.		1924.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Singapore	...	53	49	20	18	...	...	11	6	3	1	5	1	10	6	17	9
Labuan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Penang	...	...	...	1	1	...	...	1	1	...	...	5	2	3	3	1	1
Province Wellesley	...	...	...	...	...	...	...	...	...	9	1	2	...	...	...	2	1
Dindings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malacca	...	6	6	...	...	...	...	...	...	24	1	...	...	6	5	...	...
Total	...	59	55	21	19	...	...	12	7	36	3	12	3	20	14	20	11

## DIPHTHERIA.

11. Diphtheria accounted for 7 deaths. Twenty one cases were treated in hospitals, with 2 deaths.

## ENTERIC FEVER.

12. There were 54 deaths from Enteric Fever as against 52 in the previous year.

Ninty-three cases were treated in hospitals with 37 deaths.

## PNEUMONIA AND INFLUENZA.

13. Pneumonia caused 1,669 deaths as against 1,710 deaths in 1923: only 162 deaths were registered as due to Influenza.

## VENEREAL DISEASES.

14. There has been a great increase in the number of patients treated for venereal diseases since two venereal clinics were started in Singapore in 1922:—

	1922.	1923.	1942.
	—	—	—
In-patients ...	4,421	4,374	4,362
Out-patients ...	3,448	6,476	18,994
	<hr/> 7,869	<hr/> 10,850	<hr/> 23,356

Provision is being made in the coming year for the erection of another venereal diseases clinic in Singapore and for opening one clinic in Penang.

15. The Principal Civil Medical Officer, Dr. A. L. HOOPS was the guest of the Rockefeller Foundation during the month of September, when he visited Johns Hopkins and Harvard Medical Schools, and also the headquarters of the United States Public Health Service at Washington, and inspected various public health activities in the United States of America.

During this visit preliminary arrangements were made in connection with the grant by the Rockefeller Foundation of a sum of \$350,000 towards the endowment of Chairs of Bacteriology and Biochemistry in the King Edward the VII College of Medicine, Singapore.

An Agreement has since been concluded in accordance with the terms of which provision will be made by Government of the additional sum necessary to bring the emoluments of the professors appointed to these chairs up to the same scale as that of other professors in the College. Government has also agreed to institute a Chair of Biology (including Protozoology and Parasitology).

The Rockefeller Foundation makes no claim to a voice in the appointment of professors or in the future direction of the College.

## COLLEGE OF MEDICINE.

16. Including the three new appointments mentioned above the whole time professional staff of the College totals nine; in addition there are fourteen part time teachers.

Thirteen students qualified during the year. The number of licentiates of the College at the end of the year was 173, and the number of students 122. The course of instruction laid down by the General Medical Council of Great Britain has been introduced; including the pre-registration year the Medical Curriculum now extends over a period of six years. The standard of instruction and examination has been raised to conform to the new regulations.

### III.—HEALTH BRANCH.

FOR DETAILED REPORTS IN RESPECT OF EACH SETTLEMENT see APPENDIX B.—  
PAGES 21 – 60.

#### PORT HEALTH.

17. One thousand four hundred and thirty-three visits were paid to ships in Singapore and 461 visits to ships in Penang by Port Health Officers who examined 623,355 persons. 67,754 persons were retained under observation in our two maritime quarantine stations, mostly for short periods. The number of persons treated for dangerous infectious diseases in the Singapore Quarantine Station was 29, all Small-pox. In the Penang Quarantine Station 151 cases of Cholera were treated with 68 deaths. There were no cases of other dangerous infectious diseases.

#### RURAL CONSERVANCY.

18. The sanitation of rural areas was continued in all parts of the Colony. Special provision is being made for the installation of permanent latrines next year.

#### ANTI-MALARIAL WORK.

19. Mosquito surveys are being systematically continued; these are followed by the oiling of dangerous areas, and by the execution of schemes for the open or subsoil drainage of such areas.

### IV.—METEOROLOGY.

20. Returns for the various Settlements are shown in Appendix C.—  
Pages 61 – 63.

### V.—HOSPITALS AND DISPENSARIES.

21. Total in-patients treated and mortality in all Hospitals of the Colony for the past six years:—

Year.	Number treated.		Total.	Number of deaths		Total.	Percentage of deaths.		Percentage of death on total.	
	E'pean.	Asiatic.		E'pean.	Asiatic.		E'pean.	Asiatic.		
1919	...	2,944	37,812	40,756	139	4,602	4,741	4.72	12.17	11.69
1920	...	3,454	39,343	42,797	165	4,120	4,285	4.77	10.47	10.01
1921	...	2,184	41,309	43,493	74	4,311	4,385	3.39	10.44	10.09
1922	...	2,517	39,682	42,199	105	4,031	4,136	4.17	10.16	9.80
1923	...	2,858	38,835	41,693	92	3,835	3,927	3.22	9.87	9.42
1924	...	2,802	39,084	41,886	124	3,909	4,033	4.43	10.00	9.62

Details for the principal Hospitals for the year 1924 are given in Appendices D and E.—Pages 63 – 99 and Pages 100 – 131.

#### ALL HOSPITALS.

22. The total number of inpatients treated and the total deaths in the Hospitals of the Colony for some of the more important diseases are shown in the subjoined table with the corresponding figures for the preceding years.

Diseases.	1920.		1921.		1922.		1923.		1924.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Malarial Fevers	...	7,539	548	7,681	567	6,989	394	5,297	376	5,135	312
Dysenteries	...	1,451	462	1,452	490	1,497	605	1,566	454	1,387	373 (a)
Diarrhœa and Enteritis	...	460	23	451	23	390	9	485	22	544	41
Beri-beri	...	363	43	684	184	1,175	168	962	28	838	136
Phthisis and Tuberculosis	...	1,450	698	1,500	717	1,552	722	1,714	789	1,778	849
Enteric Fever	...	167	61	174	86	116	45	92	39	93	37
Ulcers	...	4,027	5	4,169	3	3,552	9	2,577	2	2,618	10
Venereal Diseases	...	3,836	52	4,319	44	4,421	140	4,194	56	4,362	145
Ankylostomiasis	...	1,501	312	1,944	278	2,155	163	2,508	124	1,887	120

(a) Dysentery Amœbic 635 cases ... 174 deaths.  
 " Bacillary 627 " ... 187 "  
 " Unclassified 125 " ... 12 "

## OUT-DOOR DISPENSARIES.

23. Out-patients treated at the various out-patient dispensaries throughout the Colony were:—

<i>Year.</i>	<i>Total patients.</i>	<i>Total attendances.</i>
1924 ... ..	96,284	167,934
1923 ... ..	74,343	139,656
1922 ... ..	58,005	99,488

24. There were 24,115 attendances at the Women's and Children's out-patient dispensary, Singapore, under the direction of Lady Medical Officer Mrs. L. S. O'MAY.

In March a travelling motor dispensary was provided in Malacca and treated 10,562 patients to the end of the year, including 2,950 cases of Yaws, 343 cases of Syphilis and 1,314 of Scabies.

Details for out-door dispensaries in the Colony are given in Appendix F.—Pages 132 – 145.

## BUILDINGS.

25. In the new General Hospital, Singapore, the second class female block has been occupied, and the third class female block is almost ready for use. Each of these blocks will hold 100 patients.

One first class block with accommodation 52 beds, and two third class male blocks each holding 80 patients, are just completed.

Additions to the General Hospital, Penang, raising the total accommodation to 200, including 20 first class and 34 second class patients, an out-door dispensary, adequate offices, and a modern X-ray room, are finished.

At Pulau Jerejak Leper Asylum, accommodation for 200 more lepers, including a new mosquito proofed hospital of 40 beds, is ready.

In Malacca the construction of a thirty bed Hospital at Alor Gajah is in progress, and a site for a new 100 bed Hospital at Jasin, to replace the old hospital, has been cleared.

The new Hostel to accommodate 50 medical students at Tan Tock Seng Hospital is about to be opened. The handsome new College of Medicine will be completed and should be in use before the end of 1925.

## MISCELLANEOUS.

26. Forty-six medical practitioners were registered during the year. The total on the Register for Malaya now numbers 799. Seventy-four licences were issued to Chemists and Druggists under the Deleterious Drugs Ordinance; ninety-six licences were issued under the Poisons Ordinance.

The Hospitals Board Ambulance in Singapore attended 622 calls for conveying cases to hospitals.

27. The Hospitals Board was constituted as follows:—

The Principal Civil Medical Officer (*Chairman*).

The Treasurer, S. S.

The Resident Councillor, Penang.

The Resident Councillor, Malacca.

The Chief Medical Officer, Penang.

The Chief Medical Officer, Malacca.

Dr. P. S. HUNTER.

Dr. E. A. ELDER.

C. V. BAILEY, Esq.

Dr. CHEONG CHEE HAI.

H. B. BAKER, Esq.

Dr. J. SHARP.

28. Table showing the sick, invaliding and deaths of European Officials of all ranks:—

	1923 - 1924.	
	—	—
(1) Total number of Officials on the Establishment ...	567	622
(2) Average number resident in Colony ...	487	538
(3) Total number of sick list ...	215	174
(4) Total number of days on sick list ...	1,991	1,474
(5) Total number invalided ...	1	3
(6) Total deaths ...	3	1
(7) Total deaths in the Colony ...	3	1
(8) Average daily number on sick list ...	5.59	4.48
(9) Average number of days on sick list ...	5.45	8.47
(10) Percentage of deaths to number resident ...	.62	.18

#### VACCINATIONS.

29. Thirty-three thousand four hundred and three vaccinations were performed during the year with the following result:—

24,040	...	...	...	Perfect.
2,326	...	...	...	Modified.
1,671	...	...	...	Failed.
5,366	...	...	...	Not seen.

#### VI.—PRISONS.

Details are given in Appendix G.—Pages 145 - 146.

#### VII.—SCIENTIFIC.

(a) *Appendix H.*—Treatment for Leprosy at the Leper Asylum, Pulau Jerejak.—Pages 147 - 164.

*Appendix I.*—Note on Transactions of the Fifth Congress of the Far Eastern Association of Tropical Medicine held in Singapore, September, 1923.—Pages 165 - 167.

#### VIII.—MISCELLANEOUS.

(a) *Appendix J.*—Report on the Lunatic Asylum, Singapore.—Pages 168 - 169.

(b) *Appendix K.*—Reports on the Analyst Branch, Singapore and Penang—Pages 169 - 174.

(c) *Appendix L.*—Reports on the Pathological Branch, Singapore, Penang and Malacca.—Pages 174 - 185.

(d) *Appendix M.*—Report on the King Edward VII College of Medicine, Singapore.—Page 186.

(e) *Appendix N.*—Report on Mosquito Inspector's Work, 1924, Penang and Province Wellesley.—Pages 186 - 191.

(f) *Appendix O.*—Report on the treatment of Yaws and Syphilis in the Balik Pulau District.—Page 191.

A. L. HOOPS ,

*Principal Civil Medical Officer,  
Straits Settlements.*